Immune Modulation Certificate
For Post Graduate Students Enabled
by Blended Learning (IMCert)

# Quality Assurance Plan

Prepared by

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# Project's risks and their mitigation

| Wider objective: | Indicators of progress | How indicators will be measured | | |
|---|---|---|---|---|
| By creating an interdisciplinary diploma curriculum in collaboration with teams in Europe, the development of educational and training excellence regarding immune modulation, monitoring, and intervention, due to specific exposure (chemical pollution, food and water contamination, climate, and poor hygiene) involved in diseases of high concern in Egypt (infections, chronic inflammation, parasitology, cancer, etc.), is combined with building the capacity of the educator staff and postdoctoral researchers. | • Improved Immune Modulation Education and Learning Standards<br>• An increase in the number of candidates who are certified and have degrees in the field of immune modulation | • Reports on the effectiveness of teaching and learning from internal and external specialists<br>• IMCert. postgraduate enrollment data based on graduation records | | |
| **Specific Project Objective/s** | **Indicators of progress** | **How indicators will be measured** | **Assumptions & risks** | **How the risks will be mitigated:** |
| 1. Create an interdisciplinary, integrated training programme with a 60 ECTS post-graduate degree that focuses on immune regulation in rare immunological illnesses of great national significance in partner higher educational institutions (HEIs).<br>2. Develop the expertise of faculty members with scientific backgrounds to help with the creation, implementation, and assessment of an immune modulation training programme.<br>3. Support the development of the scientific basis faculties at the partner universities of Al-Azhar (AZHU), Ain Shams | **1. <u>Quantitative indicators:</u>**<br>• About 500 of postgraduates/ university professionals/ Community members participated in situational analysis<br>• 30-40 courses reviewed<br>• 50 staff participated in developing capacity by m10<br>• Development of 5 fully equipped TLC<br>• 1000 pre/in-service teachers/ HCW/ employment in water treatment, industry, and food processing participated in informative course | 1. List of standards and competences after situational analysis and reports of the surveys<br>2. List of administrators attending managerial European meetings and travelling tickets<br>3. List of numbers and names of staff attending the capacity building workshops<br>4. copies of certificates of attendance<br>5. Reports of external and internal evaluator on number and quality of IMCert courses and modules revised | • Target group participation in situational and needs analysis<br>• Stakeholders must address target group needs<br>• To participate in its implementation, staff and highly qualified technicians should be aware of the emerging diploma<br>• Backing from all consortium participants<br>• Institutional support is present | • Campaigns to raise awareness of the diploma and the immunological dysregulation problems it targets that have an impact on Egypt's socioeconomic state<br>• Motivational presentations to encourage personnel to participate in capacity building |

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| (ASU), Damanhur (DMU), Cairo (CU), and Aswan (ASWU) in order to coordinate the teaching, learning, and research in the field of immune modulation.<br><br>4. Create cutting-edge teaching, learning, and curriculum materials addressing immune modulation challenges in the form of an e-Tool Kit.<br><br>5. creation of an excellence center in each partner university to advance immune modulation instruction and training in Egypt.<br><br>6. Enhance the skills of postgraduate students in science-related faculties by providing them with access to programmes of recognized professional development offered by each partner university.<br><br>7. Creating strong connections with European Universities, commencing with the Leipzig Institute in Germany, the Lorraine University in France, and the National and Kapodistrian University in Athens, Greece.<br><br>8. Bridging the gap between the academic world and the general public in order to better control risk and safety when dealing with immunological illnesses brought on by environmental problems | • 30 technicians participated in technical course<br>• 40-50 post graduates of IMCert. matching the European standards<br><br>**2. <u>Qualitative indicators:</u>**<br>• Biannual and final quality control and monitoring group are satisfactory<br>• List of stakeholders' needs and possible inputs<br>• Multi stakeholder survey instrument for mapping IMCert. competences<br>• Continuous capacity building online platform<br>• An e-Tool kit developed<br>• Validation and accreditation of blended modernized IMcert. 60 ECT diploma<br>• Auditing budget reports are satisfactory | 6. Report on the institutionalised resources, including TLC-/training materials<br>7. Reports of Numbers of postgraduates after diploma implementation as recorded in Al-Azhar University as the implementing university<br>8. Report of internal and external evaluators on monitoring visits<br>9. Managerial progress biannual reports and quality assurance biannual reports<br>10. Reports of Number and willingness of instructors to be involved in the research work concerned with immune modulation<br>11. Revising sheet of content of streamed online media and e-tool kit | | |

| Outputs (tangible) and Outcomes (intangible) | Indicators of progress | How indicators will be measured | Assumptions & risks | How the risks will be mitigated: |
|---|---|---|---|---|
| **WP1: Preparation/management /communication**<br>D1.1; Kick-off meeting<br>D1.2; Consortium agreement plan<br>D1.3; Subcontracting outlined<br>D1.4; Mapping stakeholder needs inputs<br>D1.5; report of Stakeholders' survey for postgraduates–teaching Competences<br>D1.6; competences and standard Framework.<br>D1.7; project managerial bodies and communication plan created.<br><br>**WP2: Development of human capacity**<br>D2.1: train ESC on DeCoRe.<br>D2.2 Selection of 50 staff by ESC.<br>D2.3. Training of 50 staff on IMCert. curriculum designing.<br>D2.4. Training of 50 educators on practical issues of IMCert.<br>D2.5 Informative basic Arabic courses for community addressed population.<br>D2.6 Technical course for 30 Lab. technician<br><br>**WP3: Developing IMCert. curriculum**<br>D3.1 Selection of 30-40 courses to be revised and developed<br>D3.2 Developing of immune modulation course syllabi and course modules<br>D3.3 Developing IMCert e-Toolkit and in-service curriculum<br>D3.4 Validation and accreditation<br><br>**WP4: Developing (5TLC) of excellence** | 1. **Time manner indicators:**<br>• Kick-off meeting<br>• A template for project management / biannual reporting & communication plan<br>• IMCert. teaching standards and competences framework<br>• Project's Website completed<br>• TLCs Equipment specified and call for tenders is published<br>• E-tool kit is digitised by m18 then disseminated and integrated in project website<br>• Validation and accreditation of IMCert. in each institution<br>• Pilot assessment of a number of 2-3 courses in AZHU<br>• Large scale IMCert. implementation ends<br>• IMCert. is widely disseminated through flyers, social media, scientific writing, conference presentations, international networks | • Reports on stakeholders' surveys<br>• Reports on identified IMCert. competences<br>• Reports online streaming Courses and modules uploaded<br>• Report on staff educators/postgraduate students and other stakeholders [pre/in-service biology teachers/technicians/ workers in industry/ environmental agencies/ water treatment/ food industry survey results]<br>• Framework of Compliance with EU curriculum standards.<br>• Number and quality of workshops, and trainings conducted (number is 35) from Travelling records and certificates of attendance and questionnaires filled.<br>• EU reports on Number and quality of informative arabic courses (N=4) to 1000 of community members as mentioned.<br>• EU reports on Number and quality of training of staff educators in curriculum designing (projected number is 50).<br>• EU reports on Number and quality of training of technicians trained (projected number is 30). | • Management of consortiums<br>• Understanding of the importance of the problem<br>• No resistance from staff during the implementation of new strategy<br>• It's possible that communication techniques and instruments won't promote an effective exchange of knowledge<br>• Positive postgraduates' reactions to the commencement of the immune modulation programme | • Competent personnel with the range of skills necessary to carry out the strategy and action plan<br>• It is vital to coordinate the project and identify a consistent framework, methodologies, and objectives<br>• Determining TLC's location from the beginning of the project and allocating funding<br>• Arranging seminars where postgraduates in the medical and scientific fields can meet to share knowledge about the programme |

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| D4.1; specifications and call for tender of TLC equipment.<br>D4.2; Activity plan, Installing of equipments & integration of Quality assurance.<br>D4.3; workshops for e-learning for staff and postgraduate.<br><br>**WP5: Implementation**<br>D5.1: Pilot assessment of the immune modulation programme<br>D5.2: Organising the integration and blending in PC universities<br>D5.3: Implementing the blended learning immune modulation diploma programme<br><br>**WP6: Quality Assurance**<br>D6.1 -QCMP<br>D6.2- QCMT group reports<br><br>**WP7: Dissemination**<br>D7.1: Dissemination plan.<br>D7.2: Project's Website & Integration e-tool kit<br>D7.4: organizing Conference<br>D7.5: publications<br><br>**WP8: Management**<br>D8.1: Activation of plans<br>D8.2: conflicts, Risk mitigation plan<br>D8.3: Biannual progress report<br>D8.4: financial issues<br>D8.5; Assistance to partners meetings<br>D8.6; final report | **2. Quantitative indicators:**<br>• number of [500] representativeness of stakeholders' involvement in situational analysis<br>• 30-40 courses identified from partner universities under European guidance<br>• 50 staff members joined training in designing and developing IMCert.<br>• 35 is Number of workshops actually organized<br>• 50 post graduates passed per semester after Professional IMCert. is institutionalized<br>• 5 TLCs are fully established in u partner universities<br>• N= > 2000/year Post /undergraduate students and teaching staff can use TLC computers and equipment<br>• Number of postgraduates using E-tool kit<br>• > 5000 individual to be reached through dissemination activities.<br><br>**3. Qualitative indicators:**<br>• University assessment reports and students surveys prove competent staff for IMcert teaching<br>• Postgraduates and staff positive | • Reports on Number and Relevance of topics covered from flyers and brushers in dissemination.<br>• Report on published information, conference presentations, social media use, etc.<br>• Reports of Evaluation and assessment the piloting phase<br>• Reports on TLC progress in equipments installing and functioning<br>• Report on number of visits to Official website of project.<br>• Minutes from managerial progress meetings<br>• Report on the installation of the TLC laboratories.<br>• Report on procedures for internal validation and accreditation process<br>• Report on pilot assessment outcomes.<br>• Report on monitoring visits and peer-reviewing and how feedback has been utilised<br>• Number of E-Ttoolkit Users.<br>• Reports from meetings, visits, from interested groups and research centres.<br>• Quality control and management reports<br>• self-assessment reports<br>• Biannual progress reports<br>• Reports of Disseminatio n activities, presentations in each partner | | |

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| | questionnaire results describing course curricula as more innovative, modernized, blended, inclusive<br>• Reports for availability of E-tool kit<br>• Reports of the external and internal evaluator including indicators<br>• Reports of the external and internal evaluator will include these indicators | institution, participation in national, and international conferences, publications, especially in free-accessed international journals | | |
| **Activities** | **Inputs** | | **Assumptions & risks** | **How the risks will be mitigated:** |
| WP1: Preparation/management/communication<br>D1.1; Kick-off meeting<br>D1.2; Consortium agreement plan<br>D1.3; Subcontracting outlined<br>D1.4; Mapping stakeholder needs inputs<br>D1.5; report of Stakeholders' survey for post graduates–teaching Competences<br>D1.6; competences and standard Framework<br>D1.7; project managerial bodies and communication plan created | • Staff costs = 395468 Euros<br>• Staff time: Total =5049 days divided as:<br>• 585 days total for WP1<br>• 485 days total for WP2 490 days total for WP3<br>• 450 days total for WP4<br>• 460 days total for WP5<br>• 1359 days total for WP6<br>• 864 days total for WP7 356 days total for WP8<br>• Travel Cost 118,110 Euros<br>• Cost of Stay 145,560 Euros<br>• Cost of equipment =296,847 Euros divided as: RT-PCR, Nanodrop spectrophotometer, Lamil plus class II type A2 Dual HEPA filter, Light Microscope, Cooling centrifuge, ELISA automated, Inverted microscope, Incubator for all partner universities but flouresnce microscope and micropipettes for AZHU only.<br>• Subcontracting for external evaluator, financial auditing and others 44, 000 Euros<br>• Co-finance (total 120000) 12%<br>• Staff cost<br>• Printing/publishing training materials for meetings and workshops<br>• Management (e.g. organising management meeting)<br>• Blended e-learning tools from computers, smart board, printers, faxes, servers will be provided by each university<br>• Preparing Teacher Training materials and peer-reviewing of revised course modules<br>• Printing draft reports projected to 300items<br>• Printing flyers 6000 Printing questionnaires 8,000 items | **Assumed risks:**<br>• Performing situational analysis and needs analysis on wide scales<br>• Well responds to fill survey questionnaires<br>• Institutional support in running situation analysis survey<br>• Partner communication issues | **Assumed risks mitigation:**<br>• Open channels of communication are established even before the project proposal is prepared, discussing every aspect of the project with the EU partners, making miscommunication extremely unlikely to occur<br>• Early completion of situation analysis |

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| | | **Assumed risks:**<br>• Effective instruments to evaluate needs and inputs<br>• Improving the quality of instructors entering the TLC, the quality of trainings<br>• After receiving training for the project, trainees depart their institutions | | **Assumed risks mitigation:**<br>• Contract will be signed with the trained staff<br>• Early implementation of needs analysis is recommended | |
| | | **Encountered risks** | 1. It was intended to train those 5 immunology experts in curriculum design using the Deconstruction-Construction-Reconstruction (DeCoRe) process by P2 [ULEI] from 15 May to 14 June | **Encountered risks mitigation** | 1. However, because to the COVID-19 pandemic, their training was delivered online in September 2021, February 2022, and March 2022 with the 51 staff educators |
| | | | **2.** challenges with face-to-face interviews brought on by the COVID pandemic | | 2. Interviews for selection of 50 academic staff to join training were done 3-5 August 2021 instead of 15 May-14 June |
| | | | 3. constraints on meeting and travel due to COVID pandemic | | 3. Training of 50 academic staff on IMcert curriculum designing and integration was delayed from initial calendar to be done in 6th to 9th September 2021, 6th to10th February 2022, and 3rd March 2022 instead of June, July and August 2021 |
| | | | 4. Difficulties resulting from COVID pandemic | | 4. Training 50 potential staff educators on hands on practical issues in competences of immune modulation was done during the period from 20 September 2021 to 22 December 2021 instead of 15 July 2021 to 14 November 2021 |
| | | | 5. Due to transportation and scheduling issues for certain members as well as the challenges associated with gathering a large | | 5. For the remaining staff members who did not attend the initial round of workshops, all of the seminars were held again from 12–17 March 2022 and 9–10 May 2022. |

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| | | number of staff educators for offline training, only 35 staff educators attended the 5 workshops. | |
| WP3: Developing IMCert. Curriculum<br>D 3.1 Selection of 30-40 courses to be revised and developed<br>D 3.2 Developing of immune modulation course syllabi and course modules<br>D 3.3 Developing IMCert e-Toolkit and in-service curriculum<br>D 3.4 Validation and accreditation | | **Assumed risks:**<br>• availability of staff with the skills and experience to plan, develop, and implement<br>• The institutional quality assurance committees have given their consent to participate in the validation procedure.<br>• Both external and external validation of course modules ensures the approval of the professional development<br>• creating a curriculum and dealing with staff incompetences | **Assumed risks mitigation:**<br>• The selection of employees for training was based on their prior immunology-related expertise of personnel<br>• Training staff will enhance their capacity to create and administer curriculum by strengthening and elevating their capabilities |
| WP4: Developing (5TLC) of excellence<br>D4.1; Specifications and call for tender of TLC equipment.<br>D4.2; Activity plan, Installing of equipments & integration of Quality assurance.<br>D4.3; workshops for e-learning for staff and postgraduate. | | **Assumed risks:**<br>• Existing infrastructure allows for planned activities<br>• Every campus will provide a safe location for TLC and the necessary furniture.<br>• Delay in improving the TLC infrastructure<br>• Timely provision of supplies and machinery | **Assumed risks mitigation:**<br>• As soon as feasible, universities should be informed about the requirement analysis developed in WP1. |
| WP5: Implementation<br>D5.1: Pilot assessment of the immune modulation programme<br>D5.2: Organizing the integration and blending in PC universities<br>D5.3: Implementing the blended learning immune modulation diploma programme | | **Assumed risks:**<br>• Building both human and technical capacities those match this program, in timely manner<br>• The close supervision and guidance of the EU partners<br>• Full institutional support and facilitation<br>• unwillingness to gather assessment information | **Assumed risks mitigation:**<br>• Including formative assessment in the learning process and informing students about that to increase their motivation to learn |
| WP6: Quality Assurance<br>D6.1 -QCMP<br>D6.2- QCMT group reports | | **Assumed risks:**<br>• Internal and external evaluators have competences to make the job accomplished | **Assumed risks mitigation:**<br>• A greater understanding of the significance of quality measures will motivate stakeholders, academic |

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| | | • Transparency in self-evaluation in order to persuade perfection<br>• Quality assurance reports are collected in timely manner<br>  • Lack of desire to complete evaluation reports<br>  • Inadequate output and quality monitoring | instructors, and students to complete assessment reports on time.<br>• designing a quality strategy from the first preparation work package's starting to advance through all project levels |
| WP7: Dissemination<br>D7.1: Dissemination plan.<br>D7.2: Project's Website & Integration e-tool kit<br>D7.4: organizing Conference<br>D7.5: publications | | **Assumed risks:**<br>• The target audience lacks motivation to enroll in the diploma | **Assumed risks mitigation:**<br>• The dissemination strategy will take on formal form if the cooperation of all university organizations concerned is sought.<br>• The visibility of the entire activity is at danger if there is no early planning for what will be shared and sustained, how, when, and why. |
| WP8: Management<br>D8.1: Activation of plans<br>D8.2: conflicts, Risk mitigation plan<br>D8.3: Biannual progress report<br>D8.4: financial issues<br>D8.5; Assistance to partners meetings<br>D8.6; final report | | **Assumed risks:**<br>partner misunderstanding | **Assumed risks mitigation:**<br>• Open lines of communication ensure unification of vision and make coordinating easier.<br>• Availability of a Risk Management Plan |

# Quality Assurance Plan for Educational Process

## 1- Pre-diagnostic assessment through situational analysis

Situational analysis through surveys to measure capacity of staff who will be involved in process of curriculum development and the postgraduates as target group.

**Tools**: Surveys

**Indicators:**

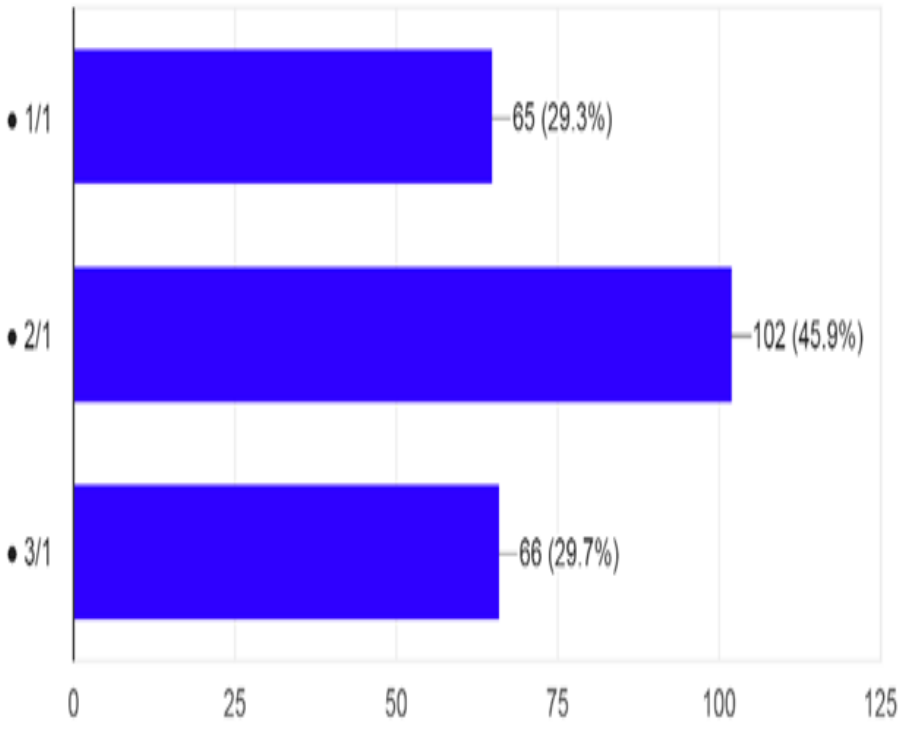
- **Quantitative**
  - 164 staff responders
  - 222 postgraduates
- **Qualitative:** areas of weakness are detected
-

**Time dependent**

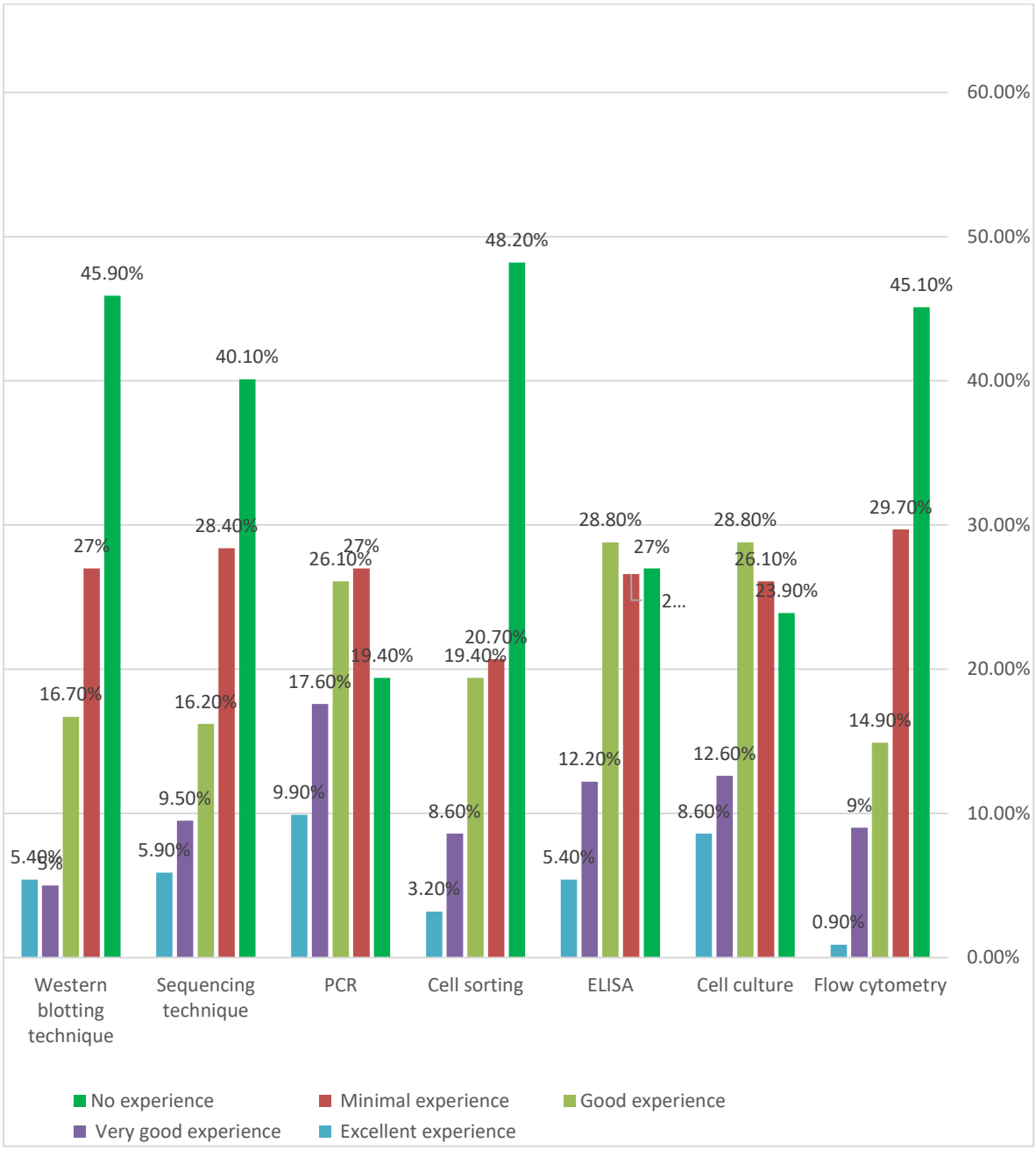
- 1st month of the project before kickoff meeting

**Outcome:**

**A. Suitable ratio of practical training: theoretical training according to surveys**



**B. Reported areas of training needed and area of previous experience**




## 2- Assessment of training given to selected staff educators

**Tools:** Surveys

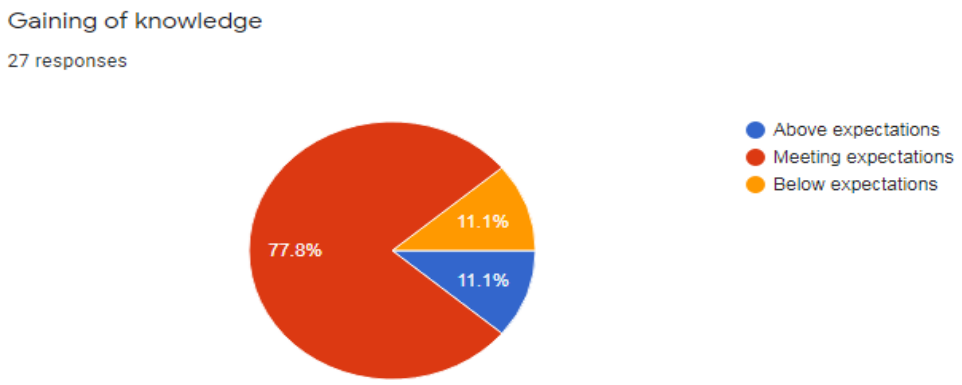
### 2.1. Western blot

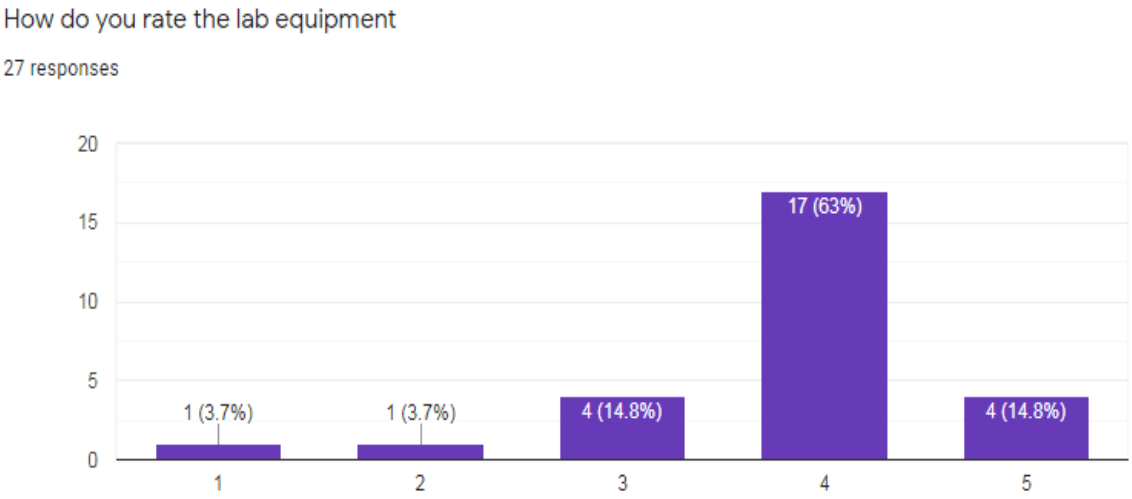
**Indicators:**

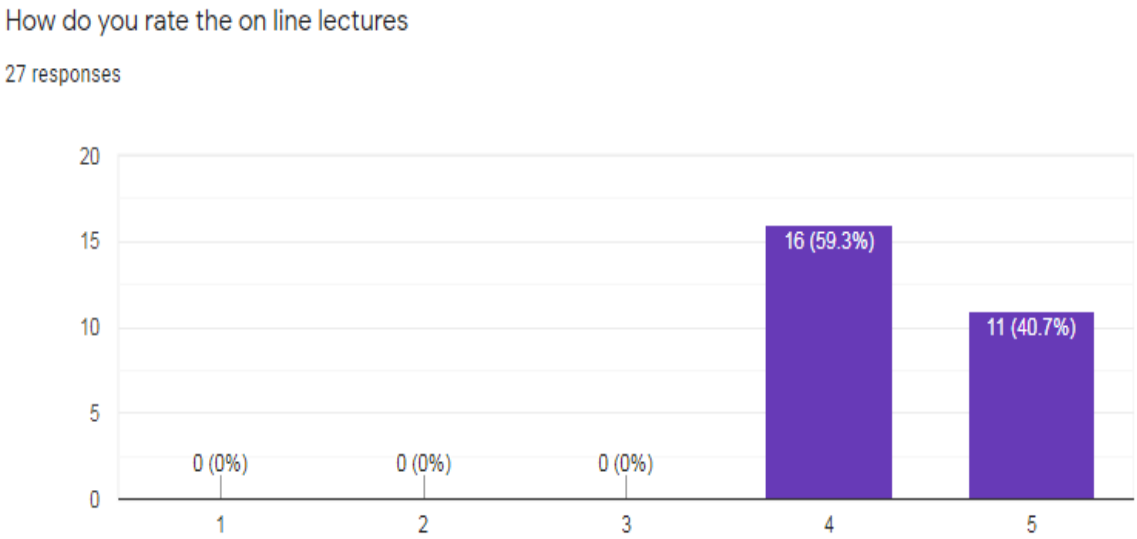
Quantitative: 27 responders

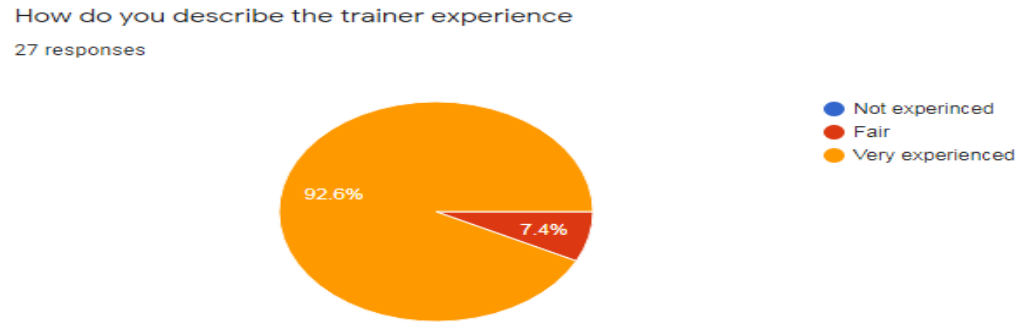
Qualitative: as seen in outcomes

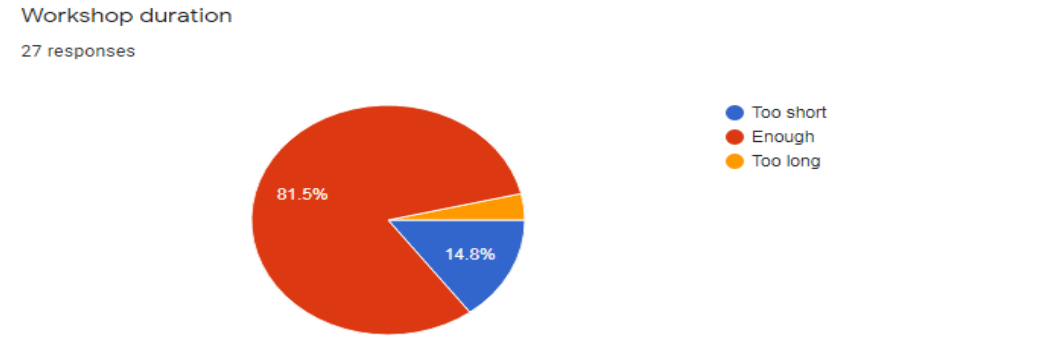
**Outcomes:**


Gaining of knowledge
27 responses
Above expectations
Meeting expectations
Below expectations
77.8%
11.1%
11.1%


How do you rate the lab equipment
27 responses
20
15
10
5
0
1 (3.7%)
1 (3.7%)
4 (14.8%)
17 (63%)
4 (14.8%)
1
2
3
4
5


How do you rate the on line lectures
27 responses
20
15
10
5
0
0 (0%)
0 (0%)
0 (0%)
16 (59.3%)
11 (40.7%)
1
2
3
4
5



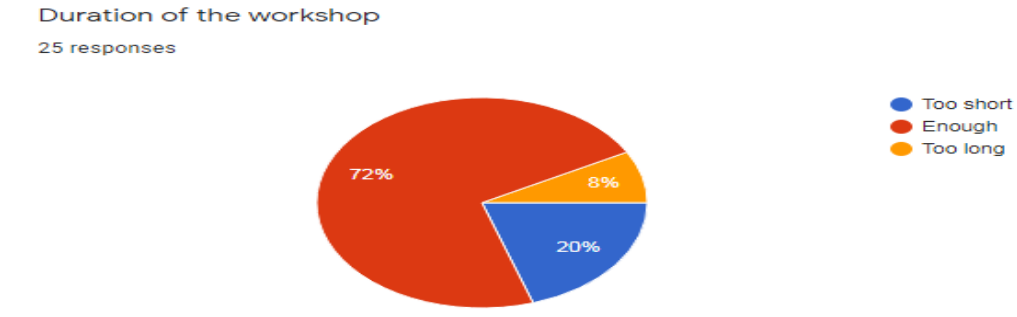



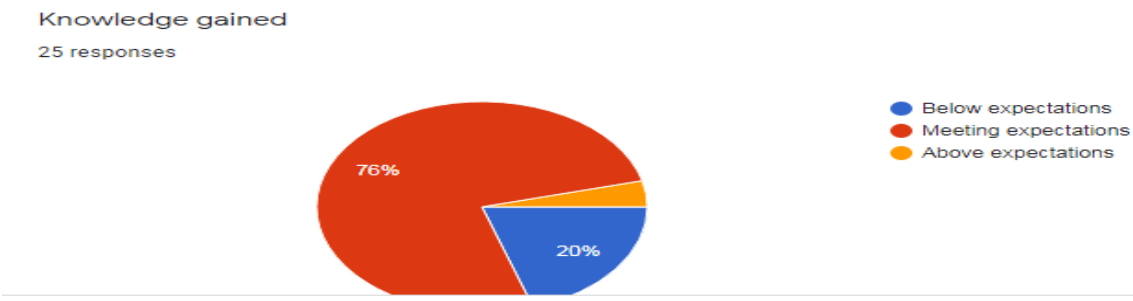

## 2.2. Tissue culture and ELISA

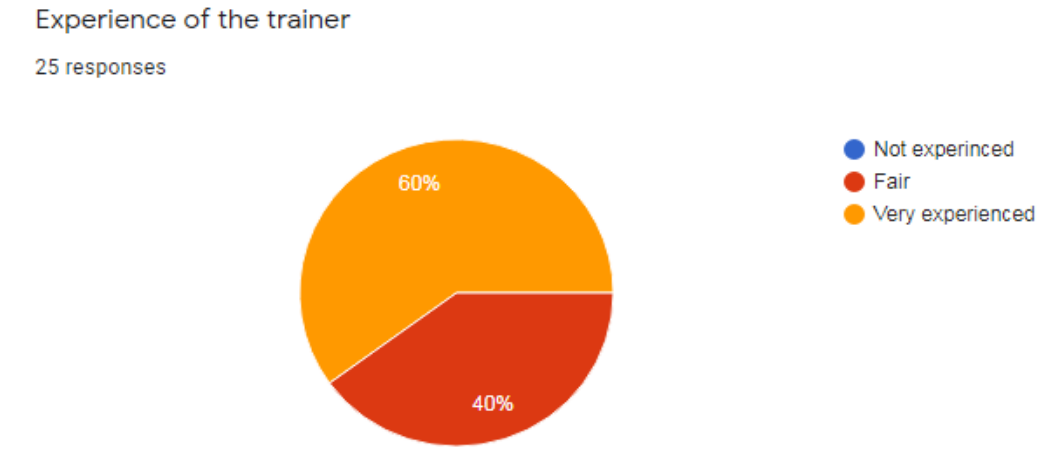
**Indicators:**

- Quantitative: 25 responders
- Qualitative: as seen in outcomes

**Outcomes:**



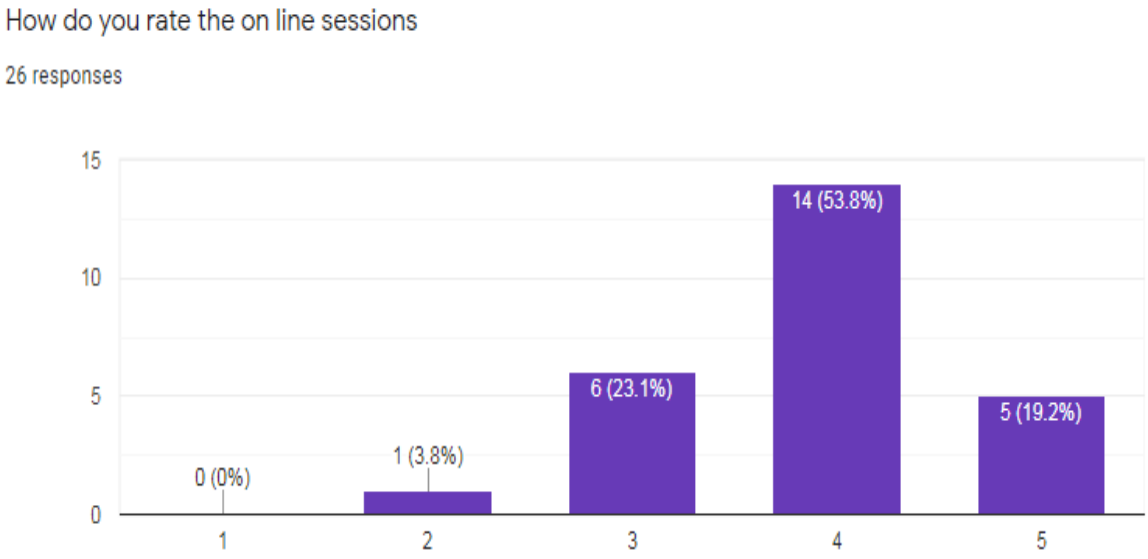



## 2.3. Conventional and real time PCR

**Indicators:**

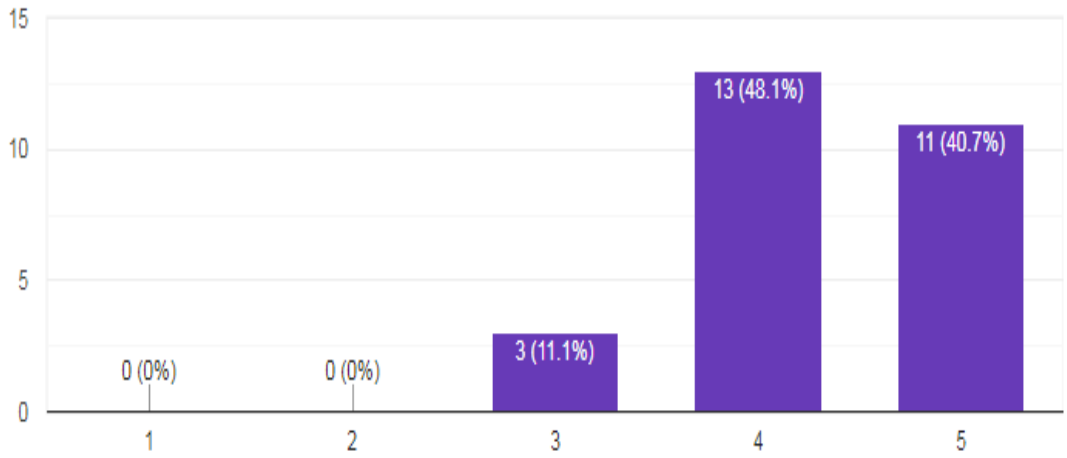
- Quantitative: 27 responders
- Qualitative: as seen in outcomes

**Outcomes:**



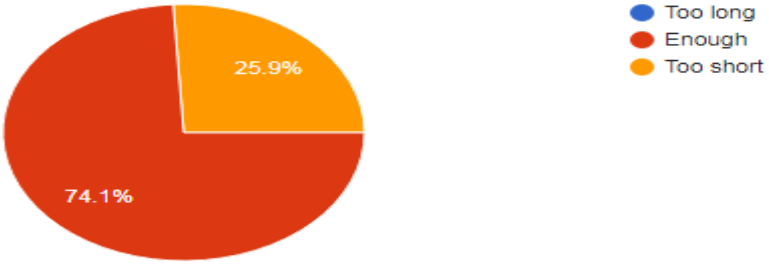
How do you rate the work package trainer

27 responses



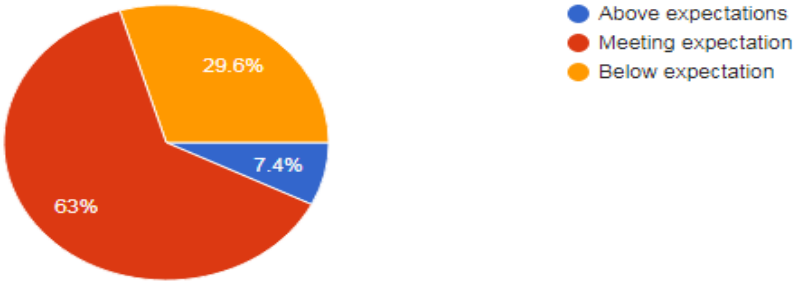

Duration of the workshop

27 responses




PCR workshop knowledge gain

27 responses

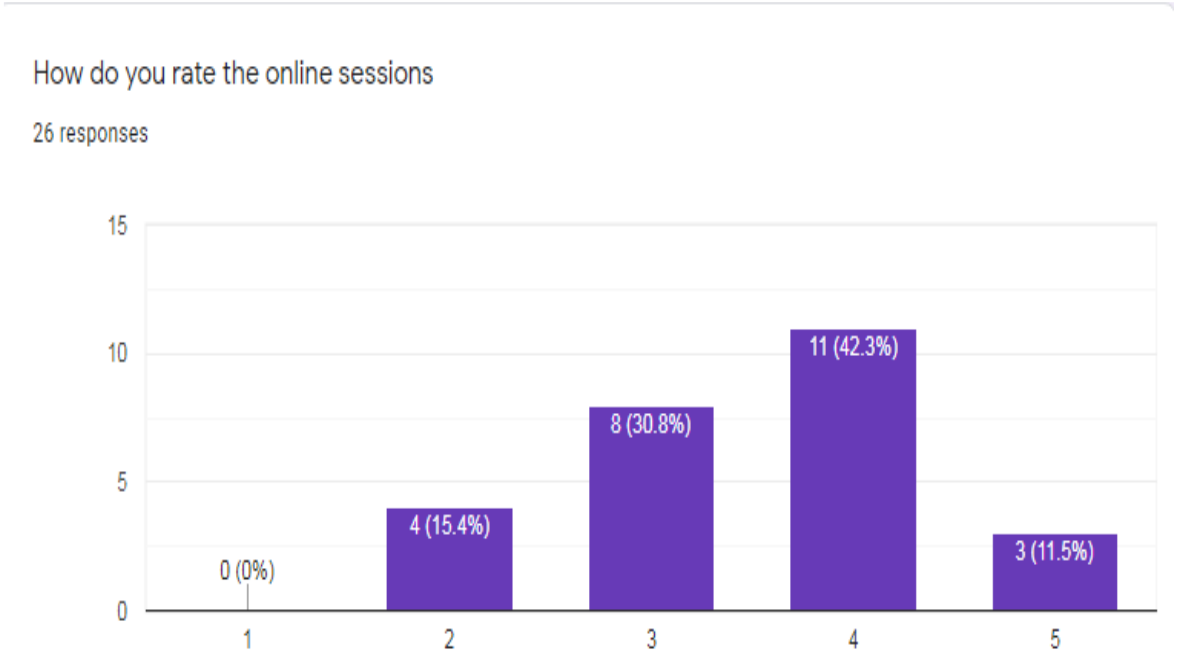


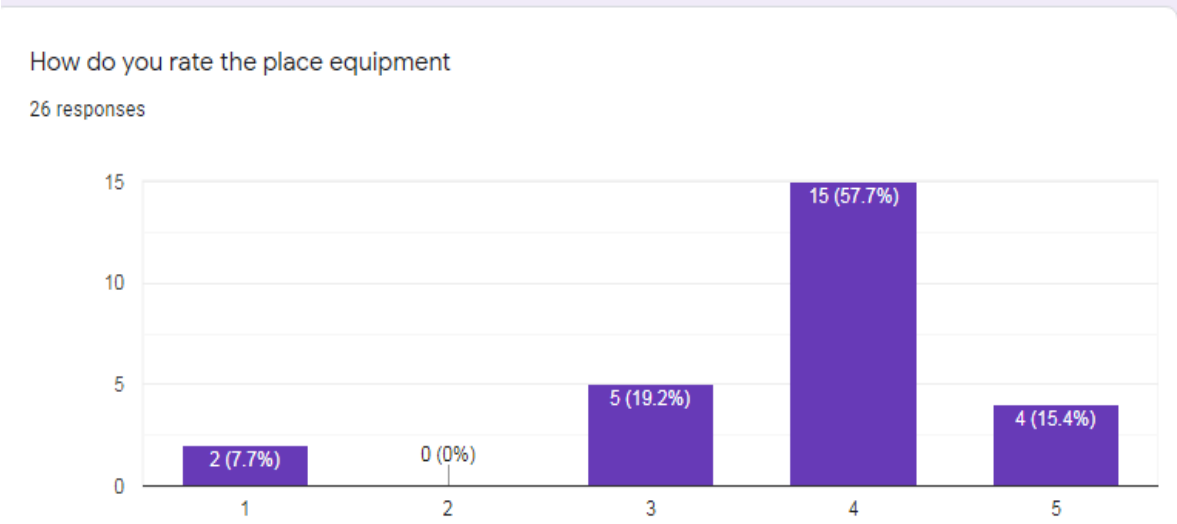
## 2.4. Next generation workshop

**Indicators:**

- Quantitative: 26 responders
- Qualitative: as seen in outcomes

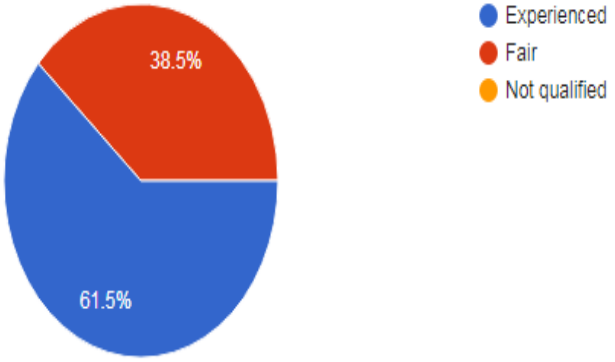
**Outcomes:**



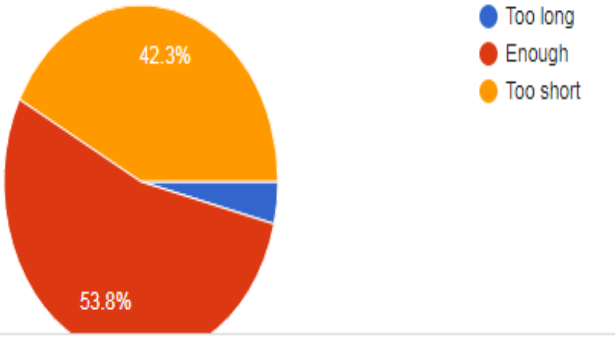
Workshop trainers

26 responses

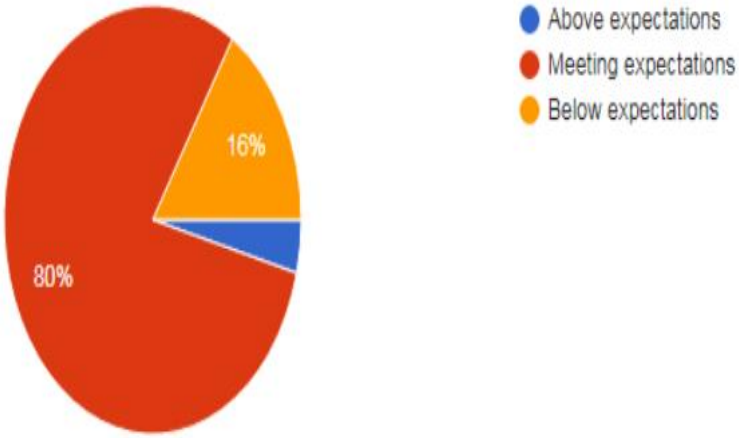



Duration of workshop

26 responses




25 responses

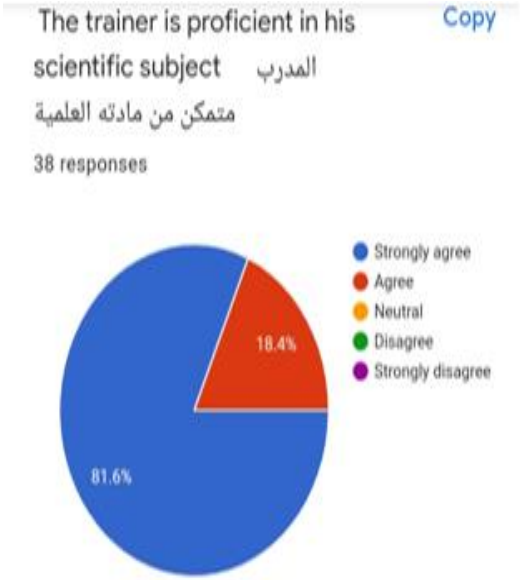


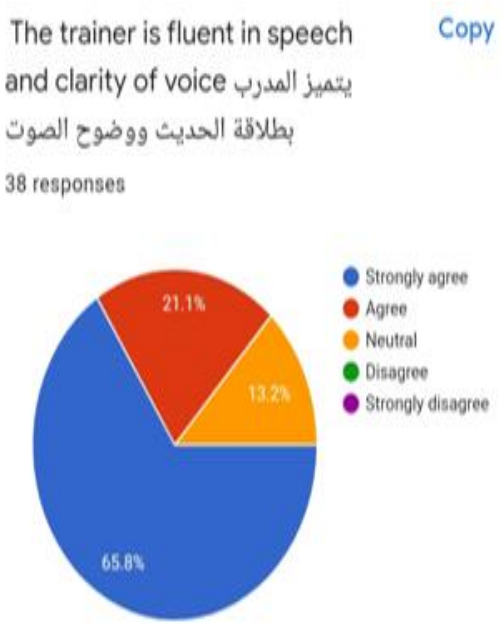
## 2.5. Flow cytometry workshop

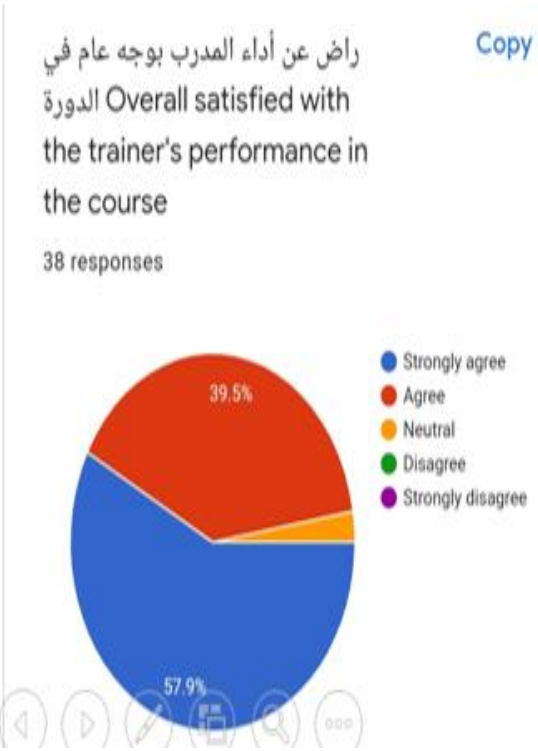
**Indicators**

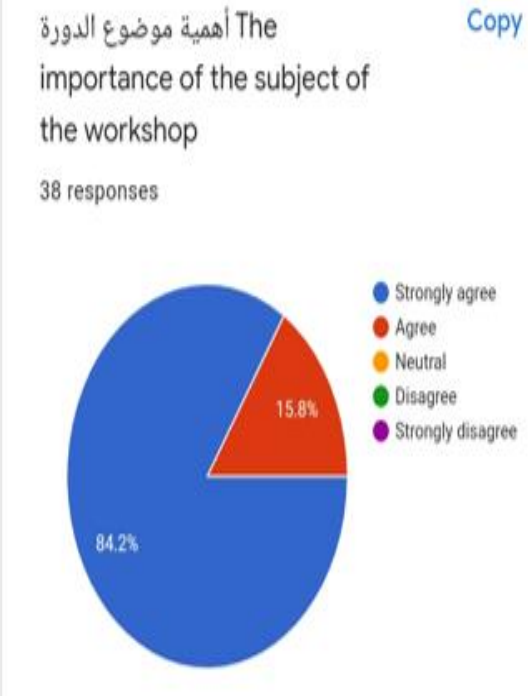
- Quantitative: 38 responders
- Qualitative: as seen in outcomes

**Outcomes:**



### 3- Assessment of raising capacity for curriculum development workshops

**Responsibility:** Leipzig University

**Indicator:**

- **Quantitative: 50 responders**
- **Qualitative: as seen in outcomes**

**Objective:**

- Quality of knowledge regarding Kern cycle and the DeCoRe methodology
- Writing smart goals and objectives

**Assessment:**

Formative by interaction during the time of the workshops

Interactive assessment tool like **woo clap** for giving effective and constructive feedback towards each other.

**Outcome:**

- The participants rated the workshop with 1.24 ± 0.53 (mean ± SD on a 6-point Likert scale, 1 = excellent, 6 = terrible) overall.
- Teachers were rated between 1.02 and 1.3.
- Staff educators rated their preparedness for developing a curriculum after the workshop with a mean value of 1.7 ± 0.91 (mean ± SD).
- They liked most interactions and learning about/with feedback and there was nothing they did not like.

**Impact**:

Written 9 modules of the curriculum revised by European partners

### 4- Human resources for internal auditing of the educational process

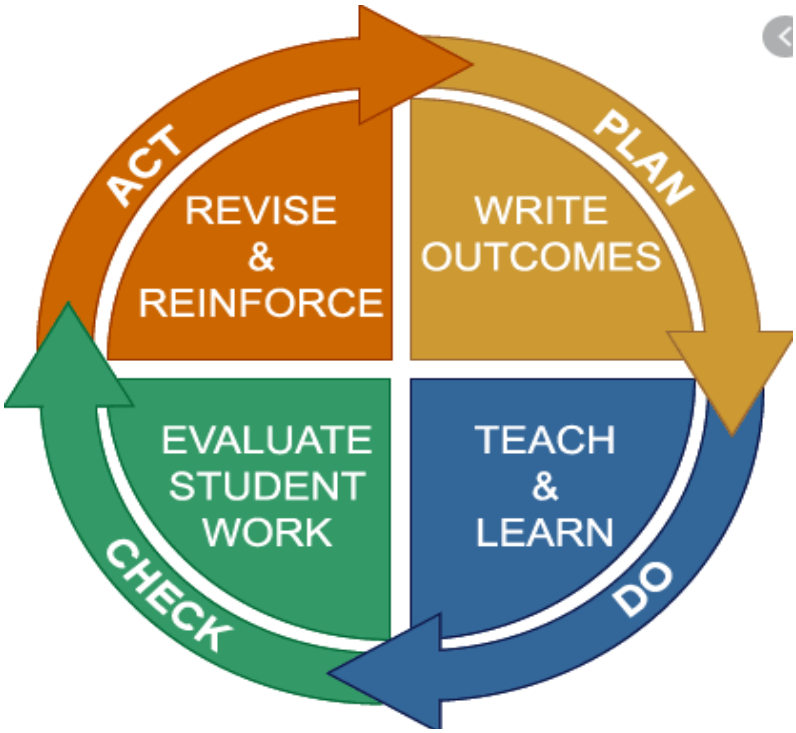
The presence of three medical assessors in the implementing institution (Al-Azhar University)

- Reham Hammad
- Fatmaalzahraa Abdelhakm
- Asmaa Madbouly

The presence of a medical education specialist in the German institution (Leipzig University)

- Sandy Kujumdshiev, Institute for Clinical Immunology, Leipzig University Hospital, Germany, German University of Applied Sciences for Health and Sports, Berlin, Germany.

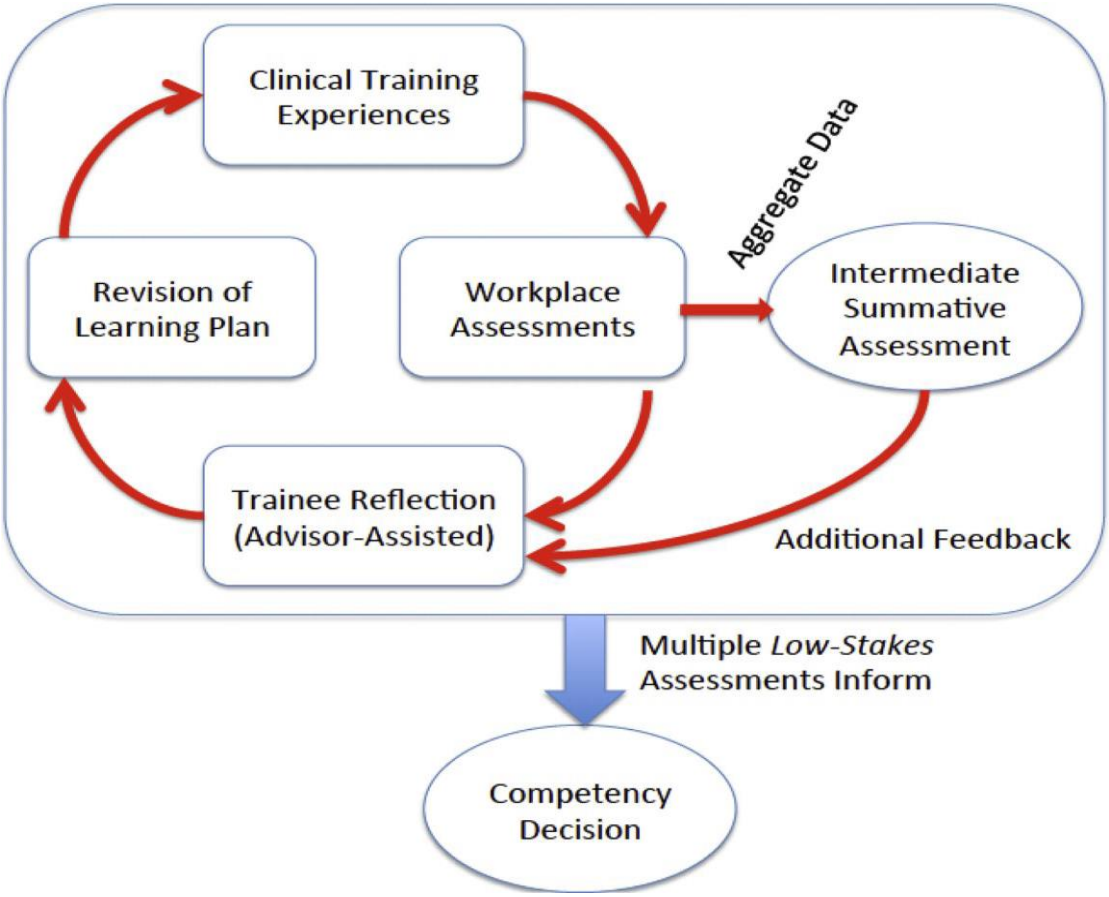
5- **Structuring of smart intended learning outcomes and alignment of the assessment tool to the ILO intended to be assessed to ensure implementing of assessment cycle**




6- **Presence of Blueprint for each module**

7- **Dependence of objective assessment tools according for measuring skills gained by postgraduates**

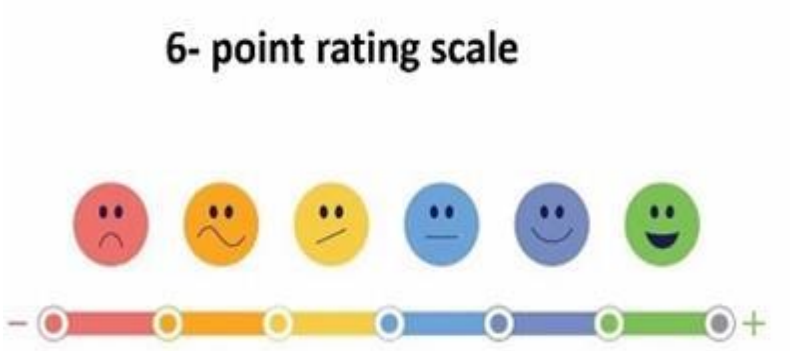
- **Written exam for cognitive knowledge**
  - Single best answer
  - Short answer questions
  - Extending matching questions
  - Modified essay questions limited to 15 % of the exam
- **Summative practical exam for measuring the skills**
  - Objective structured practical exam [OSPE] minimally formed of 12-15 stations
- **Formative or intermediate summative workplace-based assessment to assess professionalism and provide feedback**
  - Direct observation of procedural skills [DOPs]




- **DOPs scoring system**

DOPs is scored using a 6-pointrating scale where:

- 1–2 is below the expected level of competency
- 3 reflects a border line level of competency
- 4 meets the expected level of competency
- 5–6 is above the expected level of competency



- **Portfolio with specific contents to provide self-assessment and evidence-based progress**

1. Goal statement
2. Personal and professional objectives
3. Academic programs attended
4. Peer review report
5. Preceptors' report
6. Process of achieving targets
7. Criteria and timing of assessments
8. Representative artifacts; patientcare, research Letter of appreciation from patients, video recording of patient-provider interaction
9. Self-reflection
10. Future plans

- **For portfolio objectivity scoring is needed**

- Rubric is used in portfolio assessment
- Scoring guide or pre-established performance criteria in which each level of performance is described in contrast to other level
- To assess multiple outcomes simultaneously or multidimensional outcomes and each dimension needs to be rated separately
- Set the scale: select ILO and use professional judgement to assess learning on scale of 1 to 4
- Define the rating
- Identify basic description of each level eg. describe what the student can perform at beginning, developing, when competent and accomplishing

| ILO | Beginning [1] | Developing [2] | Competent [3] | Accomplished [4] |
|---|---|---|---|---|
| Perform flow cytometry experiment analysis | Ambiguous | Acceptable | clear | exact |

## 8- Presence of written Assessment tools checklist

Exams will be revised by the certified assessors before implementing the exams with considering secrecy according to checklists provided

### i. Modified essay questions checklist

| No. | Points | Yes | No | Comment |
|---|---|---|---|---|
| **Structure of the Essay** | | | | |
| 1 | Is there presence of alignment with ILO? | | | |
| 2 | Is it clear in structure (absence of ambiguous word)? | | | |
| 3 | Is the question logically and structurally sound? | | | |
| 4 | Is the question of suitable level of suggested difficulty? | | | |
| 5 | Does it contain limiting words [Itemization]? | | | |
| 7 | Does it contain Blooms taxonomy task word (action verb)? | | | |
| 8 | Does it contain a specific content? | | | |
| 9 | Is the time allowed mentioned? | | | |
| 10 | Are the marks written on every item of the question tool? | | | |
| 11 | Is the question of suitable length in relation to time and marks? | | | |
| **Purpose of Essay** | | | | |
| 12 | Does it measure a low cognitive level? mention | | | |
| 13 | Does it measure a high cognitive level? Mention | | | |
| 14 | Does meet the student expectations and training | | | |
| 15 | Could the item be assessed by another assessment tool | | | |
| **General Exam checkpoints** | | | | |
| 16 | Is the level of students concerned with the exam mentioned? [Postgraduate, undergraduate or continuous medical education] | | | |
| 17 | Is the model answer provided | | | |
| 18 | Is the signature of experienced professor who designed the question written below | | | |

### ii. Short answer question [SAQ] checklist

| | | Yes | No | Comment |
|---|---|---|---|---|
| | **The core** | | | |
| 1 | Level of testing /bloom taxonomy | | | |
| 2 | ILO number assessed | | | |
| 3 | Language is clear, no ambiguity | | | |
| 4 | No Spelling /grammar mistakes | | | |
| 5 | No Abbreviations | | | |
| 6 | The question has its mark | | | |
| | **The question:** | | | |
| 7 | Begin with action verb (list, name or enumerate). | | | |
| 8 | Number of required points are written in the question | | | |
| 9 | Separate question without focus | | | |
| 10 | Question focus followed by a few questions | | | |
| 11 | Vignette with few questions | | | |
| | **Vignette:** | | | |
| 12 | Clinical Vignette should follow a logical sequence: | | | |

| | | | | |
|---|---|---|---|---|
| | Age | | | |
| | Gender | | | |
| | Duration of complain | | | |
| | Patient history | | | |
| | Physical finding | | | |
| | Diagnostic studies | | | |
| | Initial treatment | | | |
| | Prognosis | | | |
| **13** | **Every item test one ILO** | | | |
| **14** | **Clear, no ambiguity** | | | |
| **15** | **Not complicated** | | | |
| **16** | **No Window dressing (unnecessary)** | | | |
| **17** | **No Red Herring (misleading data)** | | | |
| **18** | **Every item should assess application of knowledge** | | | |
| **19** | **Avoidance of zebras, esoterica** | | | |
| **20** | **Focus on important concepts rather than trivial facts.** | | | |
| **21** | **When focus on testing point of management the patient's diagnosis should be clear in the stem** | | | |
| **22** | **No negative phrased stems** | | | |
| | **Model answer** | | | |
| **23** | **Few words or phrases** | | | |
| **24** | **Contain all possible correct answers** | | | |

### iii. Checklist for evaluation "Problem Solving/ Case Scenario"

| | Item number | yes | no | Comments |
|---|---|---|---|---|
| **1** | **Level of testing /bloom taxonomy** | | | |
| **2** | **ILO number assessed** | | | |
| **3** | **Language is clear, no ambiguity** | | | |
| **4** | **No Spelling /grammar mistakes** | | | |
| **5** | **No Abbreviations** | | | |
| | **Vignette:** | | | |
| **6** | **Clinical Vignette should follow a logical sequence:** | | | |
| | Age | | | |
| | Gender | | | |
| | Duration of complain | | | |
| | Patient history | | | |
| | Physical finding | | | |
| | Diagnostic studies | | | |
| | Initial treatment | | | |
| | Prognosis | | | |
| **7** | **Every item test one ILO** | | | |
| **8** | **Clear, no ambiguity,** | | | |
| **9** | **Not complicated** | | | |
| **10** | **No Window dressing (unnecessary)** | | | |
| **11** | **No Red Herring (misleading data)** | | | |
| **12** | **Every item should assess application of knowledge** | | | |
| **13** | **Avoidance of zebras, esoterica** | | | |
| **14** | **Focus on important concepts rather than trivial facts.** | | | |

| | | | | |
|---|---|---|---|---|
| 15 | When focus on testing point of management the patient's diagnosis should be clear in the stem | | | |
| 16 | No negative phrased stems | | | |
| | The Essay question1 (b, c) | | | |
| 17 | Begin with action verb | | | |
| 18 | The task is clear and delimited | | | |
| 19 | The task is reasonable | | | |
| 20 | The essay question not too long and should not be split into short essay questions | | | |
| 21 | The item is better assessed with a different kind of assessment | | | |
| 22 | The use of optional questions | | | |
| 23 | Marks for each item | | | |
| 24 | The question has its mark | | | |
| | SAQ question Case scenario (1.a) | | | |
| 25 | Begin with action verb (list, name or enumerate). | | | |
| 26 | Number of required points are written in the question | | | |
| 27 | Separate question without focus | | | |
| 28 | Question focus followed by a few questions | | | |
| 29 | The question has its mark | | | |
| | SBA Question | | | |
| 30 | The question has its mark | | | |
| | lead- in Question | | | |
| 31 | In form of focus, closed question | | | |
| 32 | "cover the options rule" can be answered based on reading the stem and lead- in without looking at the options | | | |
| 33 | Stated in positive form (except, avoid not) | | | |
| | Branches/Distractors | | | |
| 34 | Incorrect options should not be wholly wrong | | | |
| 35 | 3 options are least likely diagnosis, 2 options are most likely diagnosis | | | |
| 36 | Homogenous | | | |
| 37 | Equal length | | | |
| 38 | Avoid use of overlapping answers | | | |
| 39 | Clang clue (repetition of the word) | | | |
| 40 | Role of thumb: presence of opposites in options. Pick one. | | | |
| 41 | Alphabetic & capital letter | | | |
| 42 | Consistent presentation of numeric data | | | |
| 43 | No use of None of the above & all the above | | | |
| 44 | No absolute terms as "always" or "never | | | |
| 45 | Avoid imprecise words as "often", "usually", frequently, "may", "could", "associated with" or "is important" | | | |

## iv. Checklist for evaluation single best answer "SBA" questions

| | General Item consideration | Yes | No | Comment |
|---|---|---|---|---|
| 1 | **Every item test one ILO** | | | |
| 2 | **Every item should assess application of knowledge** | | | |
| 3 | **Focus on important concepts rather than trivial facts.** | | | |
| 4 | **No grammar or spelling mistakes** | | | |
| | **I- Stem:** | | | |
| 5 | **No Stem** | | | |
| 6 | **Stem without vignette** | | | |
| 7 | **Stem with vignette** | | | |
| 8 | **Clinical Vignette should follow a logical sequence**: | | | |
| | Age | | | |
| | Gender | | | |
| | Duration of complaint | | | |
| | Patient history | | | |
| | Physical finding | | | |
| | Diagnostic studies | | | |
| | Initial treatment | | | |
| | Prognosis | | | |
| 9 | **Clear, no ambiguity** | | | |
| 10 | **Not complicated** | | | |
| 11 | **No Window dressing (unnecessary)** | | | |
| 12 | **No Red Herring (misleading data)** | | | |
| 13 | **Avoidance of zebras, esoterica** | | | |
| 14 | **When focus on testing point of management the patient's diagnosis should be clear in the stem** | | | |
| 15 | **No negative phrased stems** | | | |
| 16 | **Avoid abbreviations** | | | |
| | **II- Lead-in** | | | |
| 17 | **In form of focus, closed question** | | | |
| 18 | **"cover the options rule" can be answered based on reading the stem and lead- in without looking at the options** | | | |
| 19 | **Stated in positive form (avoid except, not)** | | | |
| 20 | **Familiar words** | | | |
| 21 | **Avoid abbreviations** | | | |
| | **III- Branches (Distractors)** | | | |
| 22 | **Incorrect options should not be wholly wrong** | | | |
| 23 | **3 options are least likely diagnosis, 2 options are most likely diagnosis** | | | |
| 24 | **Homogenous** | | | |
| 25 | **Equal length** | | | |

| | | | | |
|---|---|---|---|---|
| **26** | **Avoid use of overlapping answers** | | | |
| **27** | **No Clang clue (repetition of the word)** | | | |
| **28** | **Role of thumb: presence of opposites in options. Pick one.** | | | |
| **29** | **Alphabetic & capital letter** | | | |
| **30** | **Consistent presentation of numeric data** | | | |
| **31** | **No use of None of the above & all the above** | | | |
| **32** | **No absolute terms as "always" or "never** | | | |
| **33** | **Avoid imprecise words as "often", "usually", frequently, "may", "could", "associated with" or "is important"** | | | |
| **34** | **No grammatic cues** | | | |
| **35** | **No abbreviations** | | | |
| **36** | **Marks opposite the question** | | | |

## V. Checklist for evaluation extending matching questions "EMQ"

| | General Item consideration | Yes | No | Comment |
|---|---|---|---|---|
| **1** | **Level of testing /bloom taxonomy** | | | |
| **2** | **ILO number assessed** | | | |
| **3** | **Language is clear, no ambiguity** | | | |
| **4** | **Spelling /grammar mistakes** | | | |
| **5** | **No Abbreviations** | | | |
| | **Theme** | | | |
| **6** | **One single theme** | | | |
| **7** | **It is focus on a specific area of cognitive activity** | | | |
| **8** | **The subject is reasonable** | | | |
| | **Task/ Lead-in Question** | | | |
| **9** | **Specific** | | | |
| **10** | **It should be understanding exactly what the student needs to do** | | | |
| **11** | **State how many times responses can be used** | | | |
| | **Options** | | | |
| **12** | **Numbers (from 12-20)** | | | |
| **13** | **Single words or very short phrases.** | | | |
| **14** | **Use homogeneous options only** | | | |
| **15** | **Include most, if not all, possible answers** | | | |
| **16** | **List in alphabetical order** | | | |
| **17** | **Use options more than once** | | | |
| | **Q1/ Clinical Vignette:** | | | |
| **18** | **Clinical Vignette should follow a logical sequence:** | | | |
| | Age | | | |
| | Gender | | | |
| | Duration of complain | | | |
| | Patient history | | | |
| | Physical finding | | | |
| | Diagnostic studies | | | |
| | Initial treatment | | | |
| | Prognosis | | | |
| **19** | **Every item tests one ILO** | | | |

| | | | | |
|---|---|---|---|---|
| **20** | **Clear, no ambiguity,** | | | |
| **21** | **Not complicated** | | | |
| **22** | **No Window dressing (unnecessary)** | | | |
| **23** | **No Red Herring (misleading data)** | | | |
| **24** | **Every item should assess application of knowledge** | | | |
| **25** | **Avoidance of zebras, esoterica** | | | |
| **26** | **Focus on important concepts rather than trivial facts.** | | | |
| **27** | **When focus on testing point of management the patient's diagnosis should be clear in the stem** | | | |
| **28** | **No negative phrased stems** | | | |
| **29** | **The question has its mark** | | | |
| | **Q2/ Clinical Vignette:** | | | |
| **30** | **Clinical Vignette should follow a logical sequence:** | | | |
| | Age | | | |
| | Gender | | | |
| | Duration of complain | | | |
| | Patient history | | | |
| | Physical finding | | | |
| | Diagnostic studies | | | |
| | Initial treatment | | | |
| | Prognosis | | | |
| **31** | **Every item test one ILO** | | | |
| **32** | **Clear, no ambiguity,** | | | |
| **33** | **Not complicated** | | | |
| **34** | **No Window dressing (unnecessary)** | | | |
| **35** | **No Red Herring (misleading data)** | | | |
| **36** | **Every item should assess application of knowledge** | | | |
| **37** | **Avoidance of zebras, esoterica** | | | |
| **38** | **Focus on important concepts rather than trivial facts.** | | | |
| **39** | **When focus on testing point of management the patient's diagnosis should be clear in the stem** | | | |
| **40** | **No negative phrased stems** | | | |
| **41** | **The question has its mark** | | | |

# Quality assurance for teaching and learning methods

Quality assurance involves the systematic review of educational provision to maintain and improve its quality, equity, and efficiency. It encompasses school self-evaluation, external evaluation (including inspection), the evaluation of teachers and school leaders, and student assessments.
The critical challenge in quality improvement emerged from people with diverse backgrounds.

## Teaching and learning strategies

- **Traditional lecture**. Lecturers play the leading role in the learning process, where they transmit certain knowledge, usually in oral form and at the same time for all students in class. It is frequently adopted when there are many students in class and/or when introducing a certain topic, if an expert is invited to class, etc.
- **Flipped classroom**
- **Study cases**: Analytic and detailed study of a real or hypothetic situation, where students are expected to suggest interpretations and solutions.
- **Focused learning:** The class is divided into groups to analyze and deal with a given topic and/or task.
- **Seminar:** Students work in small/medium-sized groups to deal with a topic of interest. They study and analyze the topic, using direct documentation resources.
- **Peer-tutoring**: A student of an advanced level works as a tutor with another student, under the supervision of the lecturer.
- **Small-group work:** Students work in small groups, and the lecturer distributes an action plan describing tasks to be developed.

## Global approach (interdisciplinary approach)

- **Project work:** Both individual and/or group work, it is promoted by the students themselves according to their own interests and needs. The lecturer acts as a tutor, guiding and facilitating students' work.
- **Problem-solving**: Usually, in small groups, where students need to identify a problem, then analyse it, formulate and develop hypothesis and suggest alternatives for its resolution.

We should detect alignment of teaching and learning methods with assessment and competences as follows:

| Form of Assessment | Competences to be Assessed | Teaching and Learning Formats |
|---|---|---|
| **Written exams theses** | • Develop, analyse and judge research questions<br>• Find and consider linkages to other themes<br>• Apply theoretical knowledge Structure the theses<br>• Develop and apply effective working methods to finish the theses | • Lecture<br>• Flipped classroom<br>• Seminar |

| | | |
|---|---|---|
| | • Work under time constraints to meet deadlines<br>• Repeat, summarise, analyse, reflect understand theoretical knowledge | • Problem-solving |
| • **Review of articles**<br>• **Critique of contrasting research paper**<br>• **Analyses of text, data, cases (E)portfolio, diary**<br>• **Field work report**<br>• **Work placement report**<br>• **Project report** | • Analyse and reflect theoretical knowledge Differentiate theoretical approaches Criticise ones' own work Use scientific methods<br>• Pose problems as well as solve those set by the lecturer<br>• Conduct increasingly complex even if small scale, research<br>• Summarise those readings, which seem to be most relevant to their current needs Survey literature<br>• Conduct searches for relevant materials in libraries and online<br>• Deal with new media Reflect activities/professional skills during a work placement/project/field work<br>• Analyse and reflect technical or laboratory skills<br>• Reflect and comment on how to transfer theory into practice (e.g. during work placement, project, field work)<br>• Work under time constraints to meet deadlines | • Reading lecture<br>• Study cases<br>• Small group work (PBL&TBL<br>• Problem-solving<br>• Mentoring/supervision of work placement/ project action plan<br>• Project work<br>• Research group |
| • **Oral discussion**<br>• **Interview** | • Communicate interactively with different stakeholders<br>• Present orally information on analyses, data, results etc.<br>• Summarise theoretical knowledge orally Reflect critically and discuss research questions<br>• Comment critically on other statements/arguments<br>• Formulate problems as well as answer those set by the lecture | • (Research) seminar<br>• Reading lecture<br>• Project work<br>• Laboratory course<br>• Field work<br>• Role play<br>• Study cases<br>• Small group work (PBL&TBL) |
| • **Poster**<br>• **presentation** | • Summarise key aspects of a given issue and make them understandable to others<br>• Creative illustration of a given issue/question/problem Creative operating in a group (if group work)<br>• Lead/chair group activities (if group work)<br>• Work with other students to co-produce an answer to a problem/discover a research problem<br>• Work under time constraints to meet deadlines | • (Research) seminar<br>• Reading lecture<br>• Project<br>• Laboratory unit<br>• Field work<br>• Small group work<br>• Case study |
| • **Logbook** | • Summarise key aspects and results of a given task (e.g. laboratory unit) | • Project action plan<br>• practical classes<br>• Field work |
| • **Multiple Choice** | | |
| • **Reflective journal** | | |
| • **Journal club** | | |

## How to grade students' performance

A grading system should be combined with a scoring guide that can show some areas of improvement.
Such scoring guide is called a rubric.

**Rubric**

Rubrics provide descriptions to each level as to what is expected. That means they describe the extent to which the specified criteria have been reached. In doing so, they allow the students to understand why they received one particular score/grade. Furthermore, rubrics enable feedback to be given on what students need to do to improve their future performance (Moscal 2000; Mueller 2009)
It Has two types:

**1-Analytic rubrics**
**Example for rubric:**

***Work Effectively in Teams***

| *Scale →* <br> *↓ Dimensions* | Unsatisfactory (1) | Developing (2) | Satisfactory (3) | Exemplary (4) |
|---|---|---|---|---|
| *Research & gather information* | Does not collect any information that relates to the topic | Collects very little information – some relates to the topic. Collects some basic information | Collects some basic information – most relates to the topic. | Collects a great deal of information – all relates to the topic |
| *Fulfil team roles' duties* | Always relies on others to do the work. | Rarely does the assigned work – often needs reminding | Usually does the assigned work – rarely needs reminding. | Always does the assigned work without having to be reminded. |
| *Share in work of team* | Always relies on others to do the work. | Rarely does the assigned work – often needs reminding. | Usually does the assigned work – rarely needs reminding. | Always does the assigned work without having to be reminded. |
| *Listen to other team-mates* | Is always talking – never allows anyone else to speak. | Usually does most of the talking – rarely allows others to speak. | Listens, but sometimes talks too much. | Listens and speaks a fair amount. |

**2-Holistic rubrics**

If you want to get a more global picture of the students' performance on a certain task you use a holistic rubric. In this case, performance is assessed through multiple criteria which are matched to the best fit as a whole.

**Work Effectively in Teams**

| Unsatisfactory (1) | Developing (2) | Satisfactory (3) | Exemplary (4) |
|---|---|---|---|
| • **Does not collect any information that relates to the topic. Does not perform any duties of assigned team role.**<br>• **Always relies on others to do the work.**<br>• **Is always talking never allows anyone else to speak.** | • Collects very little information – some relates to the topic. Performs few duties.<br>• Rarely does the assigned work – often needs reminding.<br>• Usually does most of the talking – rarely allows others to speak. | • Collects some basic information – most relates to the topic. Performs nearly all duties.<br>• Usually does the assigned work –<br>• rarely needs reminding.<br>• Listens, but sometimes talks too much | • Collects a great deal of information – all relates to the topic.<br>• Performs all duties of assigned team role.<br>• Always does the assigned work without having to be reminded.<br>• Listens and encourages others to participate. |

**Three basic tasks for constructive alignment of a course (Kennedy et al. 2006):**

1. Clearly define learning outcomes.
2. Choose assessment methods that are able to assess the expected learning outcomes.
3. Select teaching and learning strategies that are likely to prepare for the assessment and with it to ensure that the learning outcomes are achieved.

**What can quality managers do in this context?**

- Assuming that it is the lecturers who are responsible for teaching and learning because they know best, quality managers can still play a supporting role for them. For example, quality managers can…
- ensure information flows concerning certain internal or externalstandards/requirements are considered in assessment procedures or when grading students' performance,
- make sure that lecturers make their grading schemes transparent to the students,
- ask good questions and find out about inconsistencies between different grading schemes at a faculty or between faculties and help to close these gaps,
- support lecturers with linking assessment methods and teaching and learning strategies appropriately to achieve the expected learning outcomes (e.g. providing a table matrix, in which lecturers have to write down the expected learning outcomes and appropriate assessment techniques and teaching/learning strategies; offering information about possible assessment formats and teaching and learning strategies)
- quality managers can take an observatory role, supporting lecturers to deal with the challenges
- They can help to evaluate to what extent the lecturers' concepts of teaching match to students' learning outcomes.
- If there is a gap, they can make it transparent to the lecturer and offer him/her different approaches of teaching and learning strategies or assessment techniques from which the lecturer can choose to revise his/her teaching approaches.

**Check the following during teaching Procedural Skills:**

- Advance from known to unknown as new knowledge

- skills are constructed upon pre-existing knowledge and skill
- Emphasize the knowledge and attitude component of skills
- Practice and teach safer aspects of the procedure first
- Allow learner sufficient time to be familiar with the equipment’s
- Determine the end points of each procedure based on
- students' and programs' need and requirements
- Be cognizant of learner's ability and needs

# Teaching Quality Assurance Checklist

Use this checklist to ensure that your course meets quality guidelines. Place an X in the columns to indicate whether the course includes the item, choosing "Yes," "Partly," "No," or "N/A.

| | Category | criteria | yes | almost | no | N\A | Comments |
|---|---|---|---|---|---|---|---|
| | Core component | Course | | | | | |
| 1- | Course introduction (video recommended) | • includes a welcome message to the learners. | | | | | |
| | | • clearly states course's purpose/goals | | | | | |
| | | • explains the general approach for the course/how to get started | | | | | |
| 2- | Faculty introduction (video recommended | • presents instructor's name, title, contact information, and contact preference | | | | | |
| | | • explains instructor's email response and feedback turnaround time | | | | | |
| | | • provides instructor's educational background, teaching philosophy, research interests, etc. | | | | | |
| 3- | End-of-course summary (video recommended) | • provides a review of the course's key concepts and takeaways | | | | | |
| 4- | Schedule (PDF recommended) | • lists the sequence of units, modules, weeks, etc., with activities and accurate due dates | | | | | |
| 5- | Learner-Centered Syllabus (PDF recommended) | • provides details about the course textbook and other required materials and readings | | | | | |
| | | • includes the course description | | | | | |
| | | • lists the course-level goals and objectives | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | • explains the technology requirements and how to ask for help | | | | | |
| | | • describes how the course works (teaching and learning methods) | | | | | |
| | | • explains the grading scale and criteria | | | | | |
| | | • outlines the student's responsibilities | | | | | |
| | | • explains the course policies | | | | | |
| | | • includes the academic integrity statement | | | | | |
| | | • includes University policies | | | | | |
| **6-** | Learner Interaction | • provides opportunities for students to interact with faculty and/or other students, in each module | | | | | |
| | | • includes guidelines for netiquette and interaction expectations | | | | | |
| | | • includes a forum for asking questions of faculty, such as "Ask the Professor" | | | | | |
| | | • includes a forum for students to interact freely with one another, such as a "Class Café" | | | | | |
| **7-** | Module Content (All Modules) | • utilizes module folders to organize materials into a logical sequence | | | | | |
| | | • includes a module Overview that introduces key ideas and concepts to be covered for each Module | | | | | |
| | | • includes Module Learning Objectives that use action verbs to reflect the skills assessed at the end of each module | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | • contains materials and activities that relate directly to the module learning objectives | | | | | |
| | | • provides materials and resources that are complete and thorough for each Module | | | | | |
| | | • Course design provides appropriate opportunities for instructor-learner interaction, including timely feedback about student progress | | | | | |
| | | • includes materials that are rich and diversified, including various media formats | | | | | |
| **8-** | Learning Activities and Assignments | • include descriptions that clearly define the purpose, requirements, directions, and expectations for each activity and assignment | | | | | |
| | | • Include workload estimate for major assignments | | | | | |
| | | • encourage interaction, collaboration, and reflection | | | | | |
| | | • state due dates clearly | | | | | |
| | | • state directions for completion and submission clearly | | | | | |
| | | • state the criteria for assessment of assignment(s) clearly | | | | | |
| | | • foster deep learning by engaging students with readings, practice, questions reflection, critical thinking, and interaction | | | | | |
| | | • demonstrate sensitivity to diversity issues: cultural, cognitive, and physical | | | | | |
| **9-** | Assessment Activities | • include formative assessments in each module, such as a “learning | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | check" to help students review, reflect on, and monitor their progress | | | | | |
| | | • The course structure includes adequate and appropriate methods and procedures to assess learners' mastery of learning objectives | | | | | |
| | | • provide opportunities for faculty feedback on formative assessments | | | | | |
| | | • include summative assessments (such as exams and projects) with clearly stated instructions, grading criteria, and rubrics | | | | | |
| | | • provide study guides and samples to help students prepare for assessments | | | | | |
| | | • provide opportunities for faculty feedback on summative assessments | | | | | |
| | | • Assessment strategies are sufficiently flexible to assess learners in a variety of ways | | | | | |
| | | Grading schemes and models are available to tutors' assessing learners. | | | | | |
| **10-** | Accessible Materials | • provide text alternatives for non-text content, including:<br>captions provided for images;<br>alt-text provided for images;<br>adaptable course content | | | | | |
| | | • include descriptive links (Old Dominion University instead of www.odu.edu) | | | | | |
| | | • include text that is easily readable, and free of spelling and grammar errors | | | | | |
| | | • provide explanations of abbreviations, acronyms, jargon, and slang | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | • use high-contrast color schemes throughout the course (including slides, documents, pages, etc.) | | | | | |
| | | • utilize pre-set heading styles for Word, PPT, and PDF (found in the font options) | | | | | |
| | | • include PDFs that are compliant and are accessible to screen reader software | | | | | |
| **11-** | Technical Components | • include legible, clear, and audible images, videos, and audio clips | | | | | |
| | | • provide images, videos, and audio clips that are manageable in size (easy to access) | | | | | |
| | | • include images, videos, and audio clips that are free from copyright restriction | | | | | |
| | | • utilize standard templates for documents and slides that have not been altered | | | | | |
| | | • apply a font that is consistent in size and style throughout the course | | | | | |
| | | • provide functional web links | | | | | |
| **12-** | Instructional design Criteria | • course design reflects a clear understanding of learner needs, and incorporates varied ways to learn and multiple levels of mastery (novice to expert) | | | | | |
| | | • Each lesson includes a lesson overview, concepts and activities, | | | | | |
| | | • The course is organized into units and lessons. | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | • The course unit overview describes the objectives, activities, and resources within the unit | | | | | |
| **13** | Reusability and standards compliance | • The learning object can be used in varying learning contexts with learners from diverse backgrounds and supports international standards and specifications | | | | | |
| | | • The learning object consists of one or more self-contained learning units, each addressing a single topic or learning objective, and structured as a standalone resource | | | | | |
| | | • Hardware and software requirements are defined | | | | | |
| | | • Learning objects are constructed in compliance with technical interoperability standards allowing sharing of content and assessments among different learning management systems / virtual learning environments. | | | | | |
| **14-** | Intellectual property and copyright | • The learning object metadata address the rights of the owner and the conditions for use | | | | | |
| | | • Issues associated with copyright or Intellectual property research (IPR) of learning materials are clearly addressed | | | | | |
| | | • If the content is developed and owned by the individual or organization submitting the learning object, a Creative Commons* license or similar is attached. | | | | | |
| | | • All quoted materials are cited correctly by adhering to one of the standard citation formats | | | | | |
| **16-** | Feedback | • Learners are provided with constructive, relevant and frequent feedback based on their activities within the learning object. | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | • Feedback supports positive learning outcomes | | | | | |
| | | • Learners are provided with timely responses and feedback when asked to answer questions or provide information. | | | | | |
| | | • feedback compares learner performance with the relevant criteria and explains how performance can be improved | | | | | |
| **17** | evaluating online courses Standard | • course objectives are measurable and state clearly what participants will know or be able to do at end of the course. | | | | | |
| | | • A clear, complete course overview or syllabus is provided | | | | | |
| | | • Objectives are matched to content requirements and to the grade and skill levels of the intended audience | | | | | |
| | | • course requirements (e.g. timeframes, expectations for communication, activities and assignments, and assessments) are consistent with course objectives and are clearly stated | | | | | |
| | | • ssues associated with copyright or IPR of learning materials are clearly addressed | | | | | |
| | | • Data protection policies are clearly stated where required – e.g. if course requires user identification. | | | | | |
| | | • Assessment of learning is included and answers and explanations are available. | | | | | |

# Laboratory safety

- Laboratory safety is considered an integral part of overall laboratory services.
- Laboratory Safety should come naturally and become your habit.
- Remember accidents just do not happen, they occur due to carelessness or ignorance.
- Compromising the safety results also from: overconfidence, work stress and poor planning.

## ➢ Types of hazards in the laboratory

- Chemical hazards
- Fire
- Electricity
- Pressure equipment & gas cylinders
- Biological hazards
- Breakage of glassware
- Sharps
- Spillages
- Radiation

## ➢ General laboratory safety measures:

- Laboratory doors should be kept closed and access to laboratory areas must be limited and controlled.
- People must be advised of potential hazards and familiarize with the safety symbols.


- Laboratory Documentation and Training should be done.
- Read lab instructions ahead of time.
- Always follow lab procedures exactly.
- Never do an unauthorized experiment.
- Eating, drinking, smoking, applying cosmetics, handling contact lenses, chewing gum and/or storing food is not permitted in the laboratory areas.
- Work surfaces should be decontaminated before and after work activities and after any spill.
- Work areas should be clear of clutter.All lab staff must wash their hands upon arrival at the laboratory, before and after putting on protective disposable gloves, after handling infectious materials, and before leaving the Laboratory.

- Use the correct PPEs for the task required.
- Laboratory coats must be kept fastened.
- An eye wash station should be readily available and working.

➢ **Laboratory sanitation:**

Everyone is in charge of keeping workstations clean.

- Lab area should be clear of boxes, supplies, or other obstructions.
- Loose wires, cables, and computer cords should be tied and organized.
- Lab floors should be mopped at least daily
- Emergency areas like eyewash stations, showers, and fire extinguishers should remain unobstructed at all times.
- Lab areas should be dusted and de-cluttered regularly.
- Clean items that may not be part of regular testing or experiments.
- Wipe down chairs, telephones, computers, timers, pens, etc. daily to make sure contagions aren't accidentally left behind.
- Workstations should be disinfected with ten percent bleach solution after any spill as well as after every work shift.
- laboratory equipment and instruments should be disinfected according to manufacturer instructions as bleach can cause damage to some lab instruments.
- Pay attention to disinfectant contact time. Read the labels on all products and follow instructions for proper use, including required contact time.
- Clean high-touch surfaces at least once a day or as often as determined is necessary. Examples of high-touch surfaces include doorknobs, light switches, handles, desks, keyboards, phones and sinks.
- Never mix cleaning products together, especially with bleach
- Ensure cleaning staff are trained on proper use of cleaning and disinfecting products.

➢ **Cleaning and disinfection Procedures**

- Always use the appropriate protective gear. At a minimum, lab coat, latex gloves and goggles.
- Remove loose items from the laboratory workstation. Beakers, test tubes, pipettes, etc. should be relocated and disposed or washed appropriately.
- Wash visibly soiled areas with soap and water prior to disinfecting.
  To meet the minimum, 10 percent bleach, mix one-part bleach with nine parts waters. It should be freshly prepared every 24 hours. This should be sufficient for most lab surfaces.
- 70% ethanol is not recommended for all surfaces, though it may be appropriate for electronics and other delicate surfaces.
- Dip a paper towel in the mixture and wipe the workbench surface thoroughly. Don't forget to clean corners, edges, and undersides. You may need to use a wire brush or other device to remove some residue.

- Caked-on material such as solidified agar or other gelatin-like products can be removed by boiling purified water in the equipment.
- Organic materials, including soap residue, can be removed by rinsing with acetone.
- An ethanol rinse is useful to sterilize lab equipment that requires all microorganisms to be removed before use.
- Avoid dragging heavy equipment and don't use sharp objects to clean the surfaces (Epoxy resin benches).
- Spills should be wiped immediately to prevent the surface from staining, drying, and corroding.
- For Stainless Steel surfaces:
  - use mild soaps, detergents, and hot water for regular cleaning and wipe the spill using a soft cloth, wiping in the direction of the steel "grain". If you're dealing with stains and caked-on residue, you can use liquid dish soap, vinegar, baking soda, and even toothpaste.
  - To polish stainless steel safely, you can use lemon oil, commercial stainless-steel polishes, or specialty stainless steel sprays.
  - Just like other surface materials, avoid using chlorine-based cleaning products since chlorine and chlorine bleach can damage the material permanently.
  - Make sure to clean using only clean and soft water since harsh or dirty water can stain or mark stainless steel surfaces.
- Wash your hands with soap and water for 20 seconds after cleaning. Be sure to wash your hands immediately after removing gloves.
  - If hands are visibly dirty, always wash hands with soap and water.
  - If soap and water are not available and hands are not visibly dirty, use an alcohol-based hand sanitizer that contains at least 60% alcohol, and wash with soap and water as soon as you can.
- Used wipes and gloves must be disposed of in the hazardous waste bin.

➢ **Management of Spills:**

- Spills should be cleared up before the area is cleaned (adding cleaning liquids to spills increases the size of the spill and should be avoided).
- Standard cleaning equipment, including a mop, cleaning bucket and cleaning agents, should be readily available for spills management. It should also be stored in an area known to all.
- "spills kit' could be used, containing a large (10 L) reusable plastic container or bucket with fitted lid, containing the following items:

- Appropriate leak-proof bags and containers for disposal of waste material
- A designated, sturdy scraper and pan for spills.
- About five sachets of a granular formulation containing 10,000 ppm available chlorine or equivalent (each sachet should contain sufficient granules to cover a 10-cm diameter spill)

- Disposable rubber gloves suitable for cleaning (vinyl gloves are not recommended for handling blood)
- Eye protection (disposable or reusable)
- A plastic apron
- A respiratory protection device, for protection against inhalation of powder from the disinfectant granules or aerosols (which may be generated from high-risk spills during the cleaning process).

- Single-use items in the spills kit should be replaced after each use of the spills kit.
- Reusable items are immersed in sodium hydroxide or sodium hypochlorite for 1 hour, rinsed and placed in a pan of clean water, and sterilized on an 18-minute cycle after each use.
- Blood and body fluid/substance spills should be dealt with as soon as possible.
- PPE should be used for all cleaning procedures and disposed of or sent for cleaning after use. Hands should be washed and dried after cleaning.

➢ **Procedure:**

**Small spills:**

- Spots or drops of blood or other small spills (up to 10 cm) can easily be managed by wiping the area immediately with paper towels, and then cleaning with warm water and detergent, followed by rinsing and drying the area.
- A hospital-grade disinfectant can be used on the spill area after cleaning.

**Large spills:**

- Put on protective equipment
- Cover spill with paper towels or other absorbent materials.
- Carefully pour a freshly prepared 1 in 10 dilution of household bleach around the edges of the spill and then into the spill. Avoid splashing.
- Allow a 20-minute contact period.
- Use paper towels to wipe up the spill, working from the edges into the canter.
- Clean spill area with fresh towels soaked in disinfectant.
- Place towels in a plastic bag and decontaminate in an autoclave.

**Major Chemical Spill**

- If spilled material is flammable, turn off ignition and heat sources.
- Close doors to affected area.
- Alert people in immediate area of spill.
- Wear protective equipment, including safety goggles, gloves, and long-sleeve lab coat.
- Avoid breathing vapours. Respiratory protection should not be required for a minor spill.

- Confine spill to small area.
- Use appropriate kit to neutralize and absorb inorganic acids and bases. Collect residue, place in container, and dispose as chemical waste.
- For other chemicals, use appropriate kit or absorb spill with vermiculite, dry sand, or diatomaceous earth. Collect residue, place in container and dispose as chemical waste.
- Clean spill area with water and dry.

➢ **Waste disposal**

**Types of laboratory waste:**

- **Biohazardous waste:**
- **Infectious waste:** waste items that could potentially transmit an infectious disease by bacteria, viruses, parasites or fungi & histo-pathological waste.
- **Anatomic waste**: fragments of tissues & organs, non-viable fetus, placenta.
- **Sharp waste**: any device having an acute rigid corners and edges capable of cutting or piercing, e.g. needles, syringes, scalpels, saws, blades and broken glass.

- **Chemical waste**: should be regarded as hazardous if toxic, corrosive, reactive, geno-toxic.

1. **Identification & segregation:**

- It should be done at the point of generation of waste, using colour coding of plastic bag containers

Red: Sharps (puncture-proof containers)
Red: Biomedical waste (infectious and pathological waste) (nonsharps in red biohazard bags/containers)
Yellow – Trace chemo waste
Black – Hazardous pharmaceutical waste
Blue – Non-hazardous pharmaceutical waste


## 2. Handling (collection, measurement, storage & transport)

| Type of waste | Specifications for Container or Bag | Example |
|---|---|---|
| Sharp waste: | • puncture-resistant<br>• leak-proof on the sides and bottom<br>• durable<br>• have the biohazard label<br>• closable for transport<br>• Full ¾ of its capacity<br>• Labelling with time of starting collection | • Empty bleach bottle<br>• Thick, rigid, puncture-resistant cardboard box<br>• Rigid plastic container all with a biohazard label. |
| Non-sharps biomedical solid and semi-liquid waste | • Plastic bag that is leakproof; designed to prevent ripping, tearing, or bursting under normal use<br>• The plastic bag should be placed inside a rigid container which should leakproof, durable, labeled with the biohazard symbol, and red or yellow in colour. | • Red or yellow plastic bags should be used.<br>• When colored bags are not available, plastic bag with the biohazard label can be placed in a red or yellow painted garbage can |
| Non-sharps biomedical liquid waste | • It should be leak-proof and durable.<br>• Biohazard label if it will be used to transport waste.<br>• Designed to be transported without spillage | • Bottles, vials, plastic container |

- Waste container should be collected and discarded when they are three quarters.
- All bags should be labeled before removal with the date and type of hazard.
- Bags and containers which are removed are immediately replaced with new ones
- Where a waste bag is removed form a container, the container is properly cleaned before a new bag is fitted their in.
- When mixing of waste types was done or placed in incorrect colored container, don't remove the waste from the wrong container or put the incorrect bag inside the correct one, only label as hazardous waste.

**3. <u>Treatment</u>**

- Solid biohazardous waste should be sterilized or otherwise rendered non-infectious prior to disposal in a dumpster. This can be done by autoclaving.
- Liquid biohazardous waste must be treated using an appropriate chemical disinfection method prior to discharge to the sewer system. For most activities, chemical treatment with sodium hypochlorite (bleach) to a final concentration of 500 - 1000 mg/L free chlorine is an effective disinfectant per CDC guidelines.

**4. Disposal**

- Incineration: controlled combustion of solid, liquid or gaseous wastes to produce gases and residues which contain little or non-combustible material.
- Sanitary landfilling: an engineering method of disposing solid waste on land in a manner that protects the environment.
- Limited volumes of chemical waste can be disposed by sanitary sewer under certain conditions. If a material meets the following criteria*, it may be flushed to the sewer with at least an equal volume of water.
- *The material must have a Hazardous Materials Identification System (HMIS) or National Fire Protection Association (NFPA) rating of 0 or 1 for health and fire, and a rating of 0 for reactivity and/or;
- *A GHS rating of 4 or 5 for health and fire, and 5 for reactivity.


**and**;

- Volume of material is limited to 5 gallons of chemical per discharge for liquids and 1 kilogram for solids and;
- Must be liquid or a water soluble solid and;
- Must not be a severe irritant or lachrymator and;
- Must not emit strong or noxious odors (examples include mercaptans (thiols) or amines) and;
- Must not be harmful to aquatic life or dangerous to the environment as specified on the label or SDS.

➢ **Handling infectious material**

Risk assessment should be performed, it is the process of evaluating the risk(s) that arise from agent and laboratory hazards, taking into account the adequacy of existing controls, prioritizing those risks, and deciding if the risks are

acceptable. The risk assessment generates information that guides the selection of appropriate microbiological practices, safety equipment, and facility safeguards that can reduce Laboratory associated infections (LAIs).

The lab should determine what hazards may exist and the risks associated with those hazards. When the agent hazards are unknown, it may be helpful for clinical laboratories to monitor current disease outbreaks and compile lists of commonly encountered pathogens for a population, region, or specimen type.

Work with organisms in different Risk Groups requires different conditions for containment and different equipment and procedures to conduct work safely. Assignment of an agent to a biosafety level for laboratory work must be based on a risk assessment.

There are four Biosafety Levels of laboratory:
Basic, Biosafety Level 1
Basic, Biosafety Level 2
Containment, Biosafety Level 3
Maximum Containment, Biosafety Level 4

**Basic laboratory, Level 1:** This is the simplest kind and is adequate for work with organisms in Risk Group 1 (They are unlikely to cause human or animal disease as food spoilage bacteria, common moulds, and yeasts).

**Basic laboratory, Level 2:** This is suitable for work with organisms in Risk Group 2 (offer a moderate risk to the laboratory worker and a limited risk to members of the community. They can cause serious human disease but are not a serious hazard e.g. staphylococci, streptococci, enterobacteria (except Salmonella typhi), clostridia, vibrios, adenoviruses, polioviruses, coxsackieviruses, hepatitis viruses, Blastomyces, Toxoplasma, and Leishmania.

The lab of this level should be clean and provide enough space for the workload and the staff, have adequate sanitary facilities, especially for handwashing, and be equipped with an autoclave. A biological safety cabinet is desirable.

**Containment laboratory, Level 3:** This is more sophisticated and is used for work with organisms in Risk Group 3 (BSC class I & II).. This group contains organisms that present a high risk to the laboratory worker but a low risk to the community should they escape from the laboratory. They do not ordinarily spread rapidly from one individual to another. Again, there are effective vaccines and therapeutic materials for most pathogens in this group.

Examples include Brucella, Mycobacterium tuberculosis, Salmonella typhi, Francisella, Pasteurella pestis, many arboviruses, LCM virus, rickettsiae, chlamydia, Coccidioides, Histoplasma, human immunodeficiency viruses (HIV).

**Maximum Containment laboratory, Level 4:** This is intended for work with viruses in Risk Group 4, for which the most strict safety precautions are necessary (BSC class III). The agents in this group offer a high risk to the laboratory worker and to the community. They can cause serious disease and are readily transmitted from one individual to another. Effective treatment and preventive measures are not usually available.

Examples include viruses of haemorrhagic fevers including Marburg, Lassa and Ebola, equine and other encephalitis viruses, SARS virus, and certain arboviruses.

- **General rules upon specimen handling:**
  - Open manipulations of biological agents may need to be conducted using a primary containment device such a BSC, and/or respiratory protection may need to be used.
  - Avoiding inhalation of biological agents.
  - Avoiding generation of aerosols by avoiding:
  - Pouring off supernatant fluids, particularly from a considerable height into a discard container.
  - Vigorous tapping of a tube to resuspend a sediment.
  - Opening cultures and the rapid snap-closing of specimen or culture containers.
  - Vigorous shaking of unstoppered tubes in a rack.
  - Centrifuging specimens or infected fluids in open buckets, particularly when using a hand operated centrifuge.
  - Opening a centrifuge immediately following the breakage of a tube or container of infected fluid before the aerosols have had time to settle.
  - Dropping or spilling a specimen or culture
  - Avoiding ingestion of biological agents and contact with skin and eyes
  - Wear disposable gloves at all times when handling specimens known or reasonably expected to contain biological agents. Disposable gloves must not be reused.
  - Avoid contact of gloved hands with the face.
  - Cover any broken skin with a suitable dressing.
  - Pouring infectious material safely.
  - Opening cultures and ampoules safely.
  - Shaking and homogenizing safely.
  - Safe use of syringes and needles.
  - Remove gloves aseptically after use and wash hand.

- Decontaminate work surfaces with a suitable disinfectant at the end of the work procedures and if any material is spilled.
- When disinfectants are used, ensure the disinfectant is active against the agents being handled and is left in contact with waste materials for the appropriate time, according to the disinfectant being used.

➢ **Entrance and exit in laboratory:**

**Laboratory staff**

**Entry**

- Laboratory staff should always carry their identification which should be worn all the time inside the laboratory premises
- The staff should head straight to change room for change to laboratory dress which includes laboratory coat, gloves, shoe, and head covers to prevent outside contamination and for protection from hazardous materials inside the laboratory.
- Workers entering radiation sensitive areas should wear radiation protective gowns and radiation monitoring badges.
- Laboratory workers should be allotted lockers for safe custody of their personal belongings such as mobile phones, lunch boxes, helmets, handbags,

**Exit**

- Laboratory workers should remove lab coats, footwear and caps before using washroom or canteen facilities and wear them again on return to the laboratory
- On leaving the laboratory at the end of the day the laboratory security should ensure that items such as test samples, laboratory records and other sensitive information are not taken out of laboratory premises

**Laboratory Visitors**

**Entry**

- Security at main gates should ascertain the identity of visitors, purpose of visit, contact person details before granting entry permission
- Security personnel should keep record of tools and other items being carried by maintenance and service engineers which should be verified again at time of exit so that no laboratory item is taken out
- Visitors should be granted permission to proceed to visitor area only or to the concerned section depending on the purpose of their visit and after confirmation with the contact person
- Visitors granted permission to laboratory sections should proceed first to change room where laboratory uniform and safety items should be issued to them on returnable basis

## Exit

- At time of exit the visitors should return their laboratory wear including visitor badges to the change room in- charge.
- Mobile phones or any other personal belongings deposited at time of entry should be taken back in the change room
- Before visitors move out of exit gate the security should inspect their belongings so that no laboratory items are removed without authorization and any sensitive documents are also not taken out.

➢ **Exit in emergency:**

- An exit route is a continuous and unobstructed path of exit travel from any point within a workplace to a place of safety.
- An exit route consists of three parts:

- Exit access – portion of an exit route that leads to an exit.
- Exit – portion of an exit route that is generally separated from other areas to provide a protected way of travel to the exit discharge.
- Exit discharge – part of the exit route that leads directly outside or to a street, walkway, refuge area, public way, or open space with access to the outside.

- Number of exit routes:

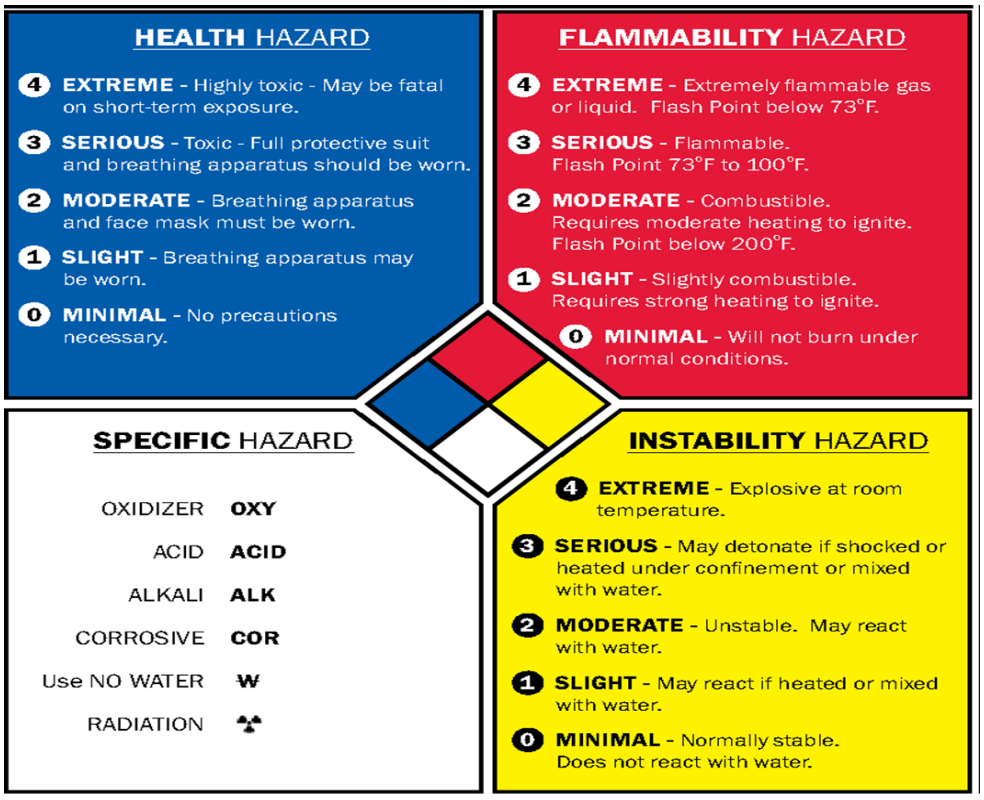
- A workplace must have at least two exit routes to permit prompt evacuation during an emergency.
- More than two exits are required, however, if the number of employees, size of the building, or arrangement of the workplace will not allow employees to evacuate safely.
- On the other hand: If the number of employees, the size of the building, its occupancy, or the arrangement of the workplace allows all employees to evacuate safely during an emergency, one exit route is permitted.
- Exit routes must be located as far away as practical from each other in case one is blocked by fire or smoke.

- Exit routes must be permanent parts of the workplace.
- Exit discharges must lead directly outside or open space with access to the outside. These exit discharge areas must be large enough to accommodate those likely to use the exit route.
- Exit stairs that continue beyond the level on which the exit discharge is located must be interrupted at that level by doors, partitions, or other effective means that clearly indicate the direction of travel leading to the exit discharge.
- Exit route doors must be unlocked from the inside. They must be free of devices or alarms that could restrict use of the exit route if the device or alarm fails.
- Side-hinged exit doors must be used to connect rooms to exit routes. These doors must swing out in the direction of exit travel.
- Ceilings of exit routes must be at least 7 feet, 6 inches high.

- An exit access must be at least 28 inches wide at all point.
- Exits must be separated by fire resistant materials.
- Keep exit routes free of explosive or highly flammable furnishings and other decorations.
- Provide adequate lighting for exit routes.
- Ensure that exit routes are unobstructed such as by materials, equipment, locked doors, or deadend corridors.
- Keep exit route doors free of decorations or signs that obscure the visibility of exit route doors.
- Post signs along the exit access indicating the direction of travel to the nearest exit and exit discharge if that direction is not immediately apparent. Also, the line-of-sight to an exit sign must be clearly visible at all times.
- Mark doors or passages along an exit access that could be mistaken for an exit "Not an Exit" or with a sign identifying its use (such as "Closet").
- Install "EXIT" signs in plainly legible letters.

## ➢ Chemical safety

- All hazardous chemicals in the workplace should be identified, labeled with the appropriate hazard signage and clearly marked with a National Fire Protection Association (NFPA) label stating the health risks, such as: carcinogen, mutagen or teratogen and the hazard class, for example, Corrosive, poisonous, flammable, or oxidizing



- Each laboratory should have a **chemical hygiene plan** that includes guidelines on proper labeling of chemical containers, manufacturers' material safety data sheets (MSDSs), and the written chemical safety training and retraining programs.
- Hazardous chemicals must be inventoried annually. In addition, laboratories are required to maintain a file of every chemical they use and a corresponding SDS.

➢ **Information included in SDS**

- Name of chemical, Name, address and emergency phone number of manufacturer
- Physical and chemical properties. - Stability and reactivity.
- Composition and Hazardous ingredients.
- Physical and health hazards - Fire and explosion data Toxicity
- Proper handling/storage instructions.
- Exposure control and personal protection.
- First-aid instructions.
- Accidental release measures. - Spill, leak, and disposal procedures.
- Lab personnel should become familiar with the location and organization of SDS files in the laboratory so that they know where to look in the event of an emergency.

➢ **Chemical Storage**

- Chemicals must be stored **as a function of compatibility,** such as organic solvents, acids, bases, and oxidizers.
- Inflammable and combustible liquids should be stored in **approved containers away from open flames and heat sources**.
- If chemicals can be stored in containers on your lab shelves, put them in **easy-to-reach places** so that the chance of something dropping, spilling, or breaking is minimal.
- Heavy items stored on lower shelves.

➢ **Fume Hoods**

- Ideally, only store chemicals and equipment that is being used for the current experiment in the fume hood. Excessive storage inside a fume hood will decrease the effectiveness by blocking baffles and obstructing flow
- Hoods are designed to have at **least 6" of clearance** inside the hood.
- Equipment or chemicals within the 6" mark will affect the hoods ability to capture vapors.
- Hood **sash lower than 18"**.

➢ **Chemical Safety tips:**

- Read labels on containers of chemicals.
- Read Safety Data Sheets (SDS)
- Handle and transfer chemicals with care.

- Keep workspace clear of unnecessary materials.
- Use correct protective clothing and equipment
- Never touch, taste, or smell a chemical.
- Never mix chemicals unless instructed.
- Keep lids on chemical containers when not in use.
- When diluting an acid, pour the acid into water.
- Consider all chemicals dangerous.
- Deal the chemical and manage spills with wearing nitrile gloves, in a fume hood and fume mask.

➢ **First aid**

Eyes splashes: Flush eyes immediately with plenty of water for several minutes. If a foreign object is lodged in the eye, do not allow the eye to be rubbed.

- Spills on the skin: Flush with large quantities of water. For acid spills, apply baking soda solution. For base spills, apply vinegar or boric acid.
- Inhalation: Get to fresh air and get prompt medical attention

## Incident Reporting

- Provide the identity of the hazardous chemicals which the employee and/or student may have been exposed.
- Provide a description of the conditions under which the exposure occurred, including quantitative exposure data, if available.
- Provide a description of any exposure signs and symptoms that the personnel are experiencing.

## Fire safety

- Each laboratory is required to **post fire evacuation plans** that are essentially blueprints for finding the nearest exit in case of fire.
- **Fire drills** conducted quarterly or annually, ensure that all personnel know what to do in case of fire.
- Know the location of **fire alarm stations, fire extinguishers, fire exits, emergency shower/eyewash, and first aid kit, etc.**
- Exit paths should always remain **clear of obstructions**, and employees should be trained to use fire extinguishers.
- Ensure fire extinguisher **on hand is appropriate**.
- Keep area around and near open flames in the lab clear of obstructions.
- **Observe proper housekeeping:** Keep work areas uncluttered, and clean frequently. Put unneeded materials back in storage promptly.
- When manipulating flammable chemicals, do so in a certified, operating **fume hood** with the sash pulled down to a protective level.

- **Turn off burners** when not in use and always ensure **burner area is clear of any flammable and any other unnecessary chemicals**.
- Always wear **personal protective equipment** when using open flames or handling flammable materials.
- **Tie back hair and loose clothes** when working with open flames.

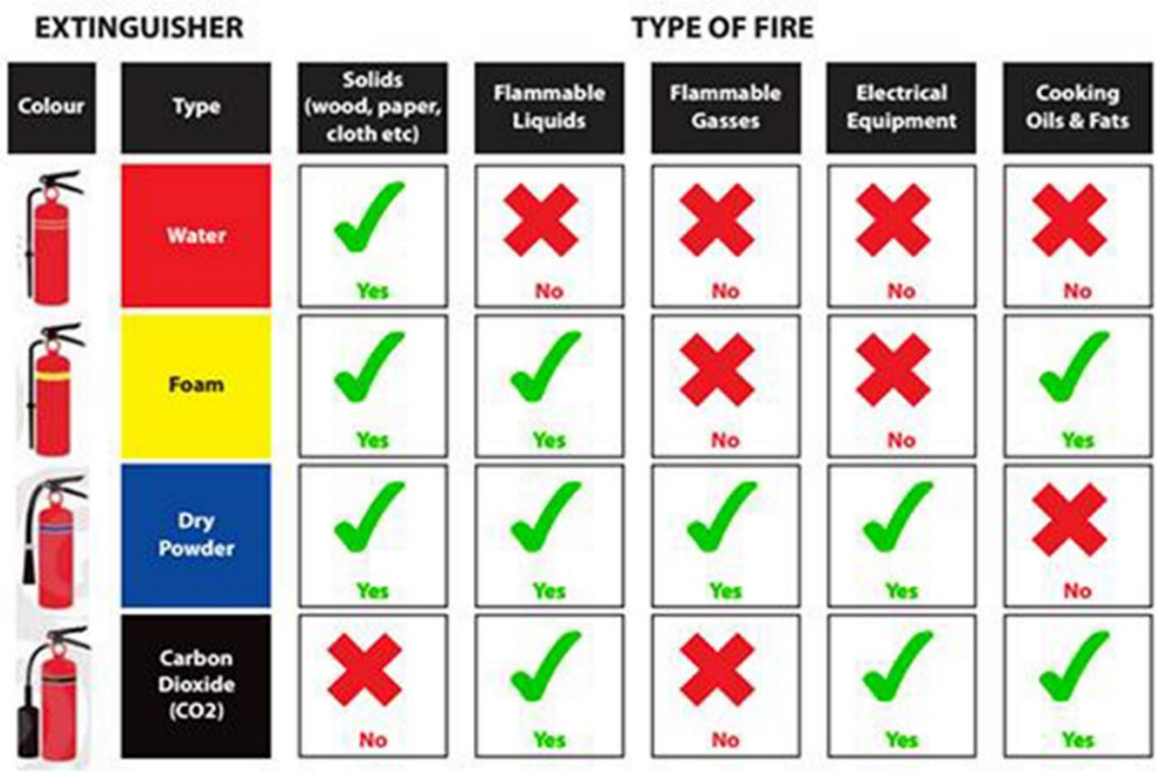
**Fire Procedures:**


**Remember: RACE:**

**R**escue any injured individuals.
**A**ctivate the fire alarm.
**C**ontain (smother) the fire, if feasible (close fire doors).
**E**xtinguish the fire, if possible.

**Fire distinguishers**

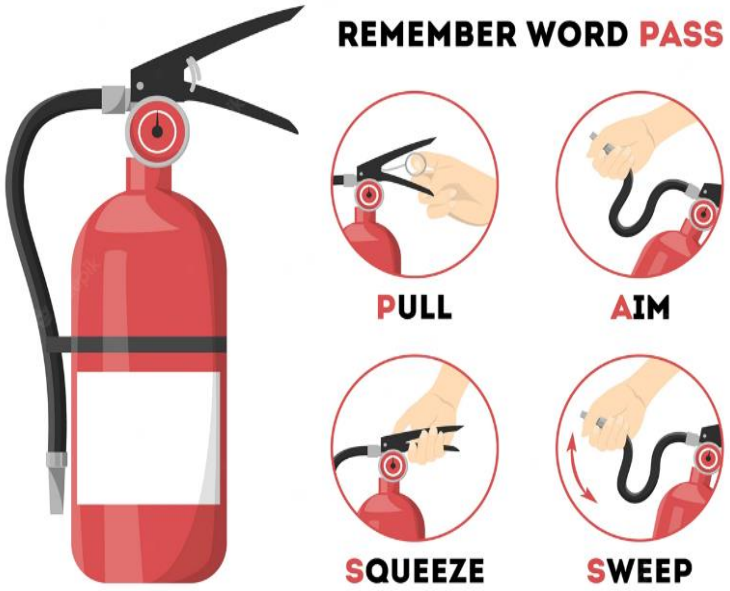
**Type A:** trash, wood, rubber, cloth, and paper
**Type B:** Chemical fire (gasoline, kerosine, some paints,
**Type C:** Electrical fire
**Type D:** Combustible metals (sodium, potassium, magnesium, alloys)




**Tips:**

- An Extinguisher is a "1st Aid" Tool.
- Don't expect it to control a big fire: For small, isolated fires only, If the fire is too big don't try to fight it.
- **Short Duration:** Depending on the size, 10 seconds to 30 seconds of spray
- **Short range:** Depending on the size/type, 5-10 feet
- **Fire ahead, escape behind:** Keep yourself between the fire and your exit
- **Spare extinguisher & observer:** Have an observer with a spare extinguisher to back you up.
- **If in doubt, bail out!** If you're not sure if you can fight the fire, you can't.

## HOW TO USE A PORTABLE FIRE EXTINGUISHER




## Electrical safety

- Electrical cords should be checked regularly for fraying and replaced when necessary.
- All plugs should be the three prong, grounded type.
- All sockets should be checked for electrical grounding and leakage at least annually.
- No extension cords should be used in the laboratory.
- DO NOT use electric wires as supports and never pull-on live wires.
- Ensure that all wires are dry before plugging into circuits.
- Only qualified and trained people should repair or modify electrical or electronic equipment.
- The breaker box must always be accessible for emergency power shut off.
- Do not overload the circuits: multiple plugs for additional connections should be avoided.
- Do not stand in water or have it on your hands when using an electrical equipment
- Never poke anything into electrical outlets.
- Unplug all electrical equipment at the end of the lab period.
- Unplug cords by pulling the plug and not the cord.

**First aid**

**Shut off the current at the source.**

- **Remove wire with rubber gloves.**

## Hazards of Compressed Gases

- Compressed gas cylinders ($CO_2$, anaerobic gas mixture) contain pressurized gases and must be properly handled and secured.

- Cylinders of compressed gases can pose a **chemical** as well as a **physical** hazard. If the valve were to break off a cylinder, the amount of force present could propel the cylinder through a brick wall.
- Storage areas must be located away from sources of ignition or excess heat.
- Cylinder temperature must never exceed 51 degrees C (124°F).
- Cylinders must always be stored in an upright position.
- Store cylinders away from heavily traveled areas and emergency exits.
- Do not use a cylinder that cannot be positively identified. Color-coding is not a reliable way of identifying a cylinder because the colors can vary from supplier to supplier.
- Always clearly mark empty cylinders and store them separately.
- All compressed gas cylinders must be returned to the supplier when empty or no longer in use.
- Gas cylinders should be properly chained and stored in well-ventilated areas even if they are assumed empty.
- The metal cap, which is removed when the regulator is installed, should always be in place when a gas cylinder is not in use.
- Close the main cylinder valve whenever the cylinder is not in use.
- Cylinders should be transported chained to special dollies or hand carts.
- Cylinders should never be rolled or dragged.
- Always use the appropriate regulator on a cylinder. Do not attempt to adapt or modify a regulator to fit a cylinder for which it was not designed. Regulators are designed to fit only specific cylinder valves to avoid improper use.
- Inspect regulators, pressure relief devices, valves, cylinder connections, and hose lines frequently for damage.
- Do not use oil or grease on any cylinder component, because a fire or explosion can result.
- Do not transfer gases from one cylinder to another. The gas may be incompatible with the residual gas remaining in the cylinder or may be incompatible with the cylinder material.
- When opening the cylinder valve, crack the valve first to ensure the regulator and plumbing can handle pressure, and then slowly open the valve.
- Orient cylinders so that the main valve is always accessible and the name of the gas is visible.

**Sharps:**

- Needles and syringes, or other sharp instruments, should be used only when there is no alternative.
- Plasticware should be substituted for glassware whenever possible.
- Use needleless systems, blunt-ended needles, syringes that re-sheathe the needle, safety scalpels, or other sharps safety devices whenever possible.

- Always carry sharp objects with points and tips facing down and away.
- Never try to catch falling sharp instruments.
- Needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated before disposal.
- Do not pick up broken glass with hands. Use mechanical means such as a brush and dustpan, tongs, or forceps.

**Keeping healthy animals:**

- Environmental requirements will vary with the species and the experimental protocol. In general, a constant and comfortable environment is required to ensure both the health of the experimental laboratory animal house for meaningful results.
- The temperature in animal holding rooms tends to be a compromise between what is best for the animal and most comfortable for the workers.
- Emergency equipment to maintain appropriate environmental temperatures and humidity should be available.
- Proper ventilation is required, air conditioning is useful in providing a stable environment of 10-15 changes per hour.
- Light should provide good visibility and uniform, glare-free illumination.
- Noise should be minimized.
- Maintaining the cleanliness and adequate ventilation.
- Animals of all species should be provided with solid flooring and bedding well prior to parturition.
- Normal floor area recommended for laboratory animals:

| Animal | Weight in gm | Floor area/Animal (cm2) | Cage height (cm2) Polythene polypropylene/SS |
|---|---|---|---|
| **Mice** | <10<br>Up to 15<br>Up to 25<br><25 | 38.7<br>1.6<br>7.4<br>96.7 | 12 |
| **Rats** | <100<br>Up to 200<br>Up to 300<br>Up to 400<br>Up to 500<br>>500 | 109.6<br>148.3<br>187.0<br>258.0<br>387.0<br>>=451.5 | 14 |

| | | | |
|---|---|---|---|
| **Hamster** | > 60<br>Up to 80<br>Up to 100<br>>100 | 64.5<br>83.8<br>103.2<br>122.5 | 12 |
| **Guinea pigs** | <350<br>>350 | 387.0<br>>=651.4 | 18 |

| Animals | Weight in gm | Floor area (Sq.ft) | Floor area (Sq.mt) | Height (inches) |
|---|---|---|---|---|
| **Rabbits** | <2000<br>Up to 4000<br>Up to 5400<br>>5400<br>Mother with kids | 1.5<br>3.0<br>4.0<br>5.0<br>4.5 | 0.135<br>0.27<br>0.36<br>0.45<br>0.40 | 14<br>14<br>14<br>14<br>14 |

| Animals | Weight (Kg) | Floor area ($ft^2$) | Floor area ($Cm^2$) | Height (Cm) |
|---|---|---|---|---|
| **Monkey** | Up to 1<br>Up to 3<br>Up to 10-12<br>Up to 12-15<br>Up to 15-25 | 1.6<br>3.0<br>4.3<br>6.0<br>8.0 | 1440<br>2700<br>3870<br>5400<br>7200 | 50<br>72<br>72<br>72<br>90 |

## Reception:

- Each new shipment of laboratory animals should be received, examined and placed in clean cages at a quarantine room.
- Shipping containers should not enter the main lab and should either be incinerated, incoming animals should be identified and their arrival appropriately recorded.
- The name of the supplier of each shipment should be noted, along with pertinent observations on the quality and condition of the animals he has supplied.
- Animals that appear sick should be euthanized without delay.

## Maintenance:

- Wherever it is possible species should be housed in separate rooms.
- Shipment of the same species, acquired from different suppliers, should also be separate if space permits.

- Where the mixing of species and/or stocks from different sources may be unavoidable every effort should be made to placed together those that are compatible, have similar environmental requirements.

**Identification & Records:**

- Cage or group identification may be used for small laboratory animals.
- Record should include each animal's arrival time, sex, estimated age and weight, breed and type, color and marking and any physical abnormalities or other identifying features. Use of room cards on the doors of animal rooms indicating the species is a good practice.

**Feed:**

- All experimental animals should receive palatable uncontaminated and nutritionally adequate food according to the requirement of the species.
- Whenever possible pasteurized or sterilized laboratory animal food obtained from standard suppliers should be used.
- The storage of bulk feeds should be such as to minimize the possibility of contamination. Dry pellets stored at room temperature in cool, dry, well-ventilated room. Bulk feeds should not be store in animal colony.
- Feed containers should be clean and disinfected frequently.

**Water:**

- Slightly acidified drinking water should be available to laboratory animals at all times, unless contraindicated by the experimental protocol.
- Admissible chlorinated watering method unlikely to spread disease or contaminate the water supply should be chosen.
- Water bottles should be clean, clear, transparent, to permit ready observation of cleanliness and water level. They should be of a material that will withstand sterilization and should be of a wide mouth design to facilitate cleaning.

**Animal Handling:**

- Under normal conditions, all standard laboratory animals, excepting primates, should be handled with bare hands.
- Only the minimal amount of force necessary should be employed. Manipulation of the type and intensity of light used often proves useful in handling small mammals and rodents.

**Cleaning and sanitation:**

- The animal house should be cleaned every day or alternative day.
- All cages, pens, racks etc. must be thoroughly cleaned and disinfected before reuse.
- Animal cages are most efficiently cleaned and sanitized with mechanical washing equipment operating at 83oC (180oF) or higher, for a minimum of ten minutes.
- Cages should be carefully rinsed to remove all traces of washing and disinfecting agents.

- Bedding in animal's cages or pens should be changed as often as necessary to keep the animals clean, dry, and relatively odour free.
- Smaller laboratory animal requires one to three changes per week.

**Management of animal products and dead animals:**

- Dead animals, animal tissue excreta, bedding, unused diet etc. should be collected with care an in-leak proof metal or plastic containers and incinerated.
- Waste which cannot be rapidly disposed of should be stored in a hold storage area provided for that purpose. Such areas must be vermin free, easily cleaned and disinfected as well as been physically separated from other storage facilities.
- Laboratory animal care is a continuous and daily responsibility. 24X365. This point should be emphasized in job descriptions for animal care personnel as it is most essential service.
- All the animal care staff should be informed of other responsibilities in emergency situations

## *Life Span of Common Laboratory Animals* (UFAW)

| Animals | Life Span |
|---|---|
| Rat | 2 – 3 years |
| Mouse | 1 – 2 years |
| Guinea pig | 3 – 5 years |
| Rabbit | 5 – 6 years |
| Monkey | 15 – 30 years |

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# Laboratory Equipment Management & Quality Assurance

**Purpose:**

This procedure gives guidance for proper management (Maintenance, verification, and calibration) of the laboratory equipment (and other lab services; the reagents and consumables) to achieve conformity to service.

**Responsibility:**

1. Lab Director
2. Lab Technical Manager
3. Quality Manager
4. Lab chemist/Technicians

**Scope:**

This procedure shall be implemented to all equipment (both hardware and software) and their related services

**Definitions:**

- **TLCs:** Teaching and Learning Centre's of excellence
- **Preventive maintenance**: is conducted to keep equipment working and/or extend the life of the equipment.
- **Corrective maintenance**, is conducted to get the out of service equipment or malfunctioning equipment working again.
- **Calibration:** determination of the accuracy of an instrument, usually by measurement of its variation from a standard, to ascertain necessary correction factors.

**Procedure:**

The TLCs will be furnished with all equipment needed for the provision of project and ensure that the requirements of the international standards are met. Laboratory equipment includes all hardware and software of instruments measuring systems and laboratory information systems

1. **Purchasing of external services (including equipment, reagents, and consumables):**
   1.1 The laboratory follows a documented procedure for selection and purchasing of external services including equipment, reagents, and consumables.
   1.2 This procedure is committed to the governmental laws, rules and regulations for selection and purchasing of all lab services including equipment.
   1.3 The authorized responsible team for preparation of TLCs in all Egyptian universities select and approve suppliers based on their ability to supply external

services (equipment, the reagents and consumable supplies) in accordance with the project and laboratory's requirements; in collaboration with other organizational departments inside the universities to fulfil this requirement.

1.4 Criteria for selection has been established.

1.5 A list of selected and approved suppliers of equipment, reagents and consumables has been maintained.

1.6 Purchasing of equipment is performed via public tenders.

1.7 The project and the laboratory team shall monitor the performance of supplies to ensure that purchased services or items consistently meet the stated criteria.

**2. Equipment Identification:**

2.1 Equipment List: All equipment (either the analytical equipment or ancillary equipment) shall be documented in the equipment list.

2.2 Equipment Labelling: Each equipment shall be labelled and uniquely identified.

2.3 Equipment Card: All equipment shall have a card containing the most relevant information's concerning that equipment (such as equipment name, equipment ID, serial number, calibration status, re-calibration date, date of receiving, date of entrance into service, contact of the manufacturer representative, etc).

**3. Equipment Instruction for use:**

3.1 Equipment shall be always operated by trained and authorized personnel.

3.2 Current instructions on the use, safety, and maintenance of equipment, including any relevant manuals and directions for use provided by the manufacturer of the equipment, shall be readily available.

3.3 The laboratory shall have procedures for safe handling, transport, storage, and use of equipment to prevent its contamination or deterioration.

**4. Equipment Acceptance Testing (Verification):**

4.1 All equipment upon installation and before use should be verified to ensure that it can achieve the necessary performance and that it complies with requirements relevant to any examinations concerned

4.2 The independent verification by the laboratory shall confirm, through obtaining objective evidence (in the form of performance characteristics) that the performance claims for the examination procedure have been met.

4.3 Verification methods for analytical equipment includes measurement of trueness, precision (including repeatability and intermediate precision), linearity, uncertainty, analytical specificity and sensitivity, detection limit and measuring interval.

4.4 Other non-analytical equipment may depend on calibration as evidence of verification of its performance

4.5 The laboratory shall obtain information from the manufacturer/method developer for confirming the performance characteristics of the procedure.

4.6 The laboratory shall document the procedure used for the verification and record the results obtained.

4.7 Quality manager and technical manager shall review the verification results and record the review and approve it from the lab director.

**5. Equipment Maintenance:**

5.1 The technical manager shall prepare the Annual Maintenance Plan for all equipment and approves it from the laboratory director. Manufacturer's instructions are used as guidance in performing equipment maintenance plan.

5.2 The Technical Manager ensures that maintenance plan is implemented as scheduled.

5.3 The maintenance records are maintained in the equipment logbook.

5.4 The maintenance may include:

- Daily Maintenance.
- Weekly Maintenance.
- Monthly Maintenance.
- Quarterly Maintenance.
- Periodic Preventive Maintenance.
- As needed maintenance.

**6. Equipment Repair:**

6.1 Equipment shall be maintained in a safe working condition. This may include electrical safety; emergency stop devices and the safe handling and disposal of chemical materials by authorized persons.

6.2 When an equipment defect has been identified, the authorized operator of this equipment immediately informs the technical manager, who assess the equipment defect

6.3 If the defect has been confirmed, the technical manager will take it out of service and clearly label it by using "Out of Service" label, until repair has been completed.

6.4 The responsible Technician/Chemist shall decontaminate equipment prior to repair using protective equipment.

6.5 The technical manager with the lab director shall follow the corrective actions procedure for equipment repair.

6.6 After repair of the defective equipment, the laboratory shall ensure that its performance is verified before being returned to laboratory use by calibration (or by verification followed by calibration if the equipment has been removed from the direct control of the laboratory for repair).

6.7 These events and dates should be registered and recorded in the Troubleshooting Log and equipment incidence report shall be prepared. All documents and records shall be maintained in the equipment logbook.

**7. Equipment Calibration and metrological traceability:**

7.1 The laboratory shall establish a program that regularly monitors and demonstrates proper calibration and performance of equipment that directly or indirectly affects examination results. Calibration of equipment considers

manufacturer recommendations.

7.2 The Technical Manager is responsible for ensuring that manufacturer, prior to use, calibrates any new analytical system at initial installation.

7.3 The manufacturer shall provide the calibration/installation certificate to the lab technical manager.

7.4 The Technical Manager is responsible for ensuring that calibration performed as directed by the manufacturer's instructions (e.g. after changing the reagent lot, in case of QC failure, etc..) to ensure that the performance of the analytical system is checked periodically.

7.5 Quality Coordinator keeps the metrological traceability and uncertainty certificate of the reference material used for calibration in the external document file in the quality unit.

7.6 Authorized Lab chemist/technician keep calibration records in QC/Calibration file of each equipment and recording the calibration status and date of recalibration.

**8. Equipment Decontamination:**

8.1 All laboratory equipment contaminated with bio-hazardous materials will be decontaminated prior to re-entry into service, repair, or decommissioning.

8.2 Equipment is decontaminated according to manufacturer recommendation by the authorized lab staff (Lab Chemist/Technician).

8.3 The responsible personnel should wear personal protective equipment: gloves, lab coat, etc..).

8.4 If there are no clear instructions for decontamination by the manufacturer, follow the following procedure:

- The Lab Chemist/Technician ensures that the equipment is switched off and disconnected from its power source
- The Lab staff wet a clean paper towel with 0.2 % chlorine.
- Then, he/she wipes the equipment and discards the used paper towel into a bio-hazardous waste.
- After the decontamination is completed and the equipment is dry, the Lab Chemist/Technician re-connects the equipment to the power source.
- The decontamination shall be documented on the appropriate maintenance form.

**9. Quality Control Procedures:**

9.1 Each analytical equipment shall follow an internal QC procedure, which include testing at different levels and frequencies according to the guidelines and the manufacturing methods provided with the quality control materials

9.2 Frequency of QC running shall be on a daily base (or every run if the equipment is not used daily) to ensure quality of the testing procedures

9.3 The idea of running a QC test is to help health care provider and the patients to get an accurate result.

9.4 QC testing is performed by the committed personnel who are well trained and authorized for QC testing. The authorized personnel always follow the same procedure according to the provided manufacturing methods.

9.5 QC data will be plotted in a suitable chart (e.g. a levey-Jenning chart), and the results will be evaluated by the technical manager/supervisor (before starting routine work). The results shall be compared with the provided ranges. The laboratory shall apply the multi-rule procedure developed by Westgard and uses a series of control rules to interpret control data.

9.6 All QC results shall be maintained in the QC log.

9.7 In the future, the lab is aiming to participate into an external quality assessment (Interlaboratory comparison).

**10. Equipment Logbook:**

10.1 Each equipment shall have a logbook include equipment related information which describe the operation working instruction, maintenance.

10.2 The authorized person(s) will be responsible for maintaining and updating the logbook which is kept in accessible place for all authorized personnel in the laboratory.

10.3 These records shall be maintained and shall be readily available for the lifespan of the equipment.

10.4 The logbook includes:

- Identity of the equipment (Manufacturer's name, model, ID, serial number)
- Equipment Card.
- Contact information of the manufacturer or the supplier.
- Condition when received.
- Date of receiving and date of entrance into service.
- Copy of the equipment record in the Equipment List.
- Authorization List (mention authorized person(s) on that equipment).
- Installation records.
- Equipment Manufacturer's Manual or Operating Instructions (either hard or soft copy).
- Working instruction which describe the equipment operation from startup to switching off the instrument in details.
- Verification records which confirm that the performance claims for the examination procedure have been met.
- Preventive Maintenance Plan.
- Maintenance records (both preventive and corrective)
- Copy of the equipment record in the annual Calibration Plan
- Calibration Certificate (including metrological traceability)
- Troubleshooting history log (malfunction, damage, repair).
- Incidence or accident records.

**11. Reagents and consumables:**

11.1 The laboratory shall have a documented procedure for the reception, storage, acceptance testing and inventory management of reagents and consumables.

11.2 The laboratory shall store received reagents and consumables according to manufacturer's specifications to maintain purchased items in a manner that prevents damage or deterioration.

11.3 Each new formulation of examination kits with changes in reagents or procedure, or a new lot or shipment, shall be verified for performance before use in examinations.

11.4 Consumables that can affect the quality of examinations shall be verified for performance before use in examinations.

11.5 The laboratory shall establish an inventory control system for reagents and consumables.

11.6 The system for inventory control shall segregate uninspected and unacceptable reagents and consumables from those that have been accepted for use.

11.7 Instructions for the use of reagents and consumables shall be documented and readily available.

11.8 Adverse incidents and accidents that can be attributed directly to specific reagents or consumables shall be investigated and reported to the manufacturer and to the technical manager and lab director.

11.9 Records shall be maintained for each reagent and. These records shall include the following:

a) identity of the reagent or consumable.
b) manufacturer's name and batch code or lot number.
c) contact information for the supplier or the manufacturer.
d) date of receiving, the expiry date, date of entering into service.
e) condition when received (e.g. acceptable or damaged).
f) manufacturer's instructions.
g) records that confirmed the reagents or consumable's initial acceptance for use.
h) performance records that confirm the reagents or consumable's ongoing acceptance for use.

# Communication plan

| Communication Type | Target group | Goals | Schedule | Format | Responsibility |
|---|---|---|---|---|---|
| Kick-off | All project partners and managerial boards | 1. Introduce the project details to all partners<br>2. Manage the partnership agreement<br>Set expectations | 8-9 March<br>One-time event | 1. On-line Presentations and seminars<br>2. Charts Statistical analysis of stakeholder survey of needs | Al-Azhar University team<br>+<br>Project coordinator |
| Managerial | Project managerial board + project coordinator | 1. To enable the PMB and coordinator to closely monitor the project development<br>2. Share information of coming plans<br>3. Check dead time of reporting | 7 meetings /3 years | 1. On-line and physical meeting<br>2. Biannual given Reports<br>3. A web-based collaborative Google meet /zoom will be used as a key communication tool.<br>4. The project formal platform is intended to foster collaboration between all partners at all levels.<br>5. The IMCert website will also be an interactive tool where all partners can easily report their activities and costs to prepare the biannual reports. | Project coordinator |
| Financial | Project coordinator with leader of each partner and European University | 1. Transfer of money according to partnership agreement | Every 6 moths | Bank transfer report | Project coordinator |
| Formal | Universities representatives | 1. Formal universities announcements | On demand | Formal Email of stamped reports by president and vice president of universities | Universities representatives + legal representatives |
| Developmental | Work package leaders | 1. Set time planed<br>2. Clear issues | Twice monthly<br>On demand | 1. On-line and physical meeting | Work package leader |

| | | | | | |
|---|---|---|---|---|---|
| | | 3. Distribution of responsibilities<br>4. Share developmental information<br>5. Coordination of work<br>6. Present deliverables<br>7. Gather feedback<br>8. Deciding next step | | | |
| Team meeting in each partner and European University | Team members | 1. Identify coming steps and review previous details<br>2. Develop solutions of faced problems as single team | 1-2 Weekly | 1. Physical meeting | Team leader in each University |
| Disseminating | Stakeholders | 1. To raise awareness of stakeholders about IMCert. and its impact on education in partner Universities and Egyptian community<br>2. To open channels of sharing information about the project with the stakeholders<br>3. To allow the feedback process about the project through engaging the target groups and key actors in a two-way dialogue along project activities.<br>4. To open doors of collaborations with other initiatives in field of immune modulation. | Day 1 to end of 3rd year [along all project time] | **National:**<br>1. Main web page of the TLC<br>2. Social media and you tube channels<br>3. Local Conferences<br>4. Flayers<br>5. Posters<br>6. Workshops<br>7. Local Radio and TV station<br>8. Local newspaper and professional magazines<br>9. Give lectures, and seminars<br>**International:**<br>1. Two international conferences to be held in Germany and France for publicity<br>2. The IMCert. website | Damanhur University +<br>UL (France) |
| Emergency | Any project member | Finding quick solution in Emergency situations | Any time | 1. Telephones | Project coordinator |

| | | | | | |
|---|---|---|---|---|---|
| | | | | 2. Emails | |
| Finalization | PMB+ All partners + stakeholders | 1. Reviewing the previous status<br>2. Identifying success and failures<br>3. Announcements of Project final Data<br>4. Referring to lessons learned | 3rd year at project end | Physical Meeting<br>Finalizing report | Project coordinator<br>+<br>Aswan University team |

# Managerial Meetings and IMCert Minutes

Day: Monday-Tuesday

Date: 8-9/3/2021

Online meeting - conference hall at Al-Azhar University

## Attendees:

- **Dr. Mahmoud Seddik-** Vice president of Al-Azhar university.
- **Dr Hesham Farhood,** Dean of faculty of Medicine (for girls), Al-Azhar University.
- **Dr Maha Ghazi,** Dean of faculty of Science (for girls), Al-Azhar University.
- **Dr Sayed Bakry,** Dean of faculty of Science, Al-Azhar University.
- **Eng. Karim Hamdy -** General Coordinator of Erasmus Programs.
- **Dr. Awad Tageldin,** Egyptian Presidential Adviser for Health Affairs
- **IMCert team of Al-Azhar University, Cairo.**
- **IMCert team of liepzig University, Germany.**
- **IMCert team of UL University, France.**
- **IMCert team of kapodestian University, Greece.**
- **IMCert team of Cairo University, Cairo.**
- **IMCert team of Ain-Shams University, Cairo.**
- **IMCert team of Damanhur University, Damanhur.**
- **IMCert team of Aswan University, Aswan.**

**Meeting Items:**

**Day One**

**Session 1 (opening session):**

- Welcome speech to dr. Reham Hammad mentioned dr Mahrasawy, dr Sedik all respected deans and professors present the meeting.
- Welcome greetings speech of dr Seddik, Vice president of Al-Azhar university, mentioned about the importance of the project, European experience exchange, in addition bringing the technical European experience to Egypt will be a remarkable step to develop the capacity of our staff educators and postgraduate and will also open the door for advanced research in Egypt concerned with immunology.
- Welcome greetings speech of Dr Hesham Farhood, Dean of faculty of Medicine (for girls) Al-Azhar University, mentioned about his great pleasure to implement the first step of this Educational project, empowered by the European experience under the umbrella of the ERASMUS+, and expressed his pleasure that this project was written

by a member of faculty of Medicine, Wishing nothing but success for such a project and founders.

- Welcome greetings speech of Maha Ghazi, Dean of faculty of Science (for girls), Al-Azhar University, mentioned about the importance of the project and its role in the development of blended learning curriculum, tackling immune disorders influenced by Egyptian environment, in addition, it will be of great social and educational importance.
- Welcome greetings speech of Dr Sayed Bakry, Dean of faculty of Science, Al-Azhar University, mentioned about how the project bridges the gaps between community health, and environmental problems and the academia, rather than the importance of advanced teaching and learning center (TLC) inside the university.
- Welcome greetings to Dr. *Awad Tageldin*, Egyptian Presidential Adviser for Health Affairs, mentioned his pleasure that this project is the 1st trial of Al-Azhar university and the importance of the project & its timing to keep pace with the current immune changes.
- Round table presentation of all project partners.
- **Project overview introduced by dr. M Mansour determine the points to be mentioned as:**
- The need for that project including:
  - Immune Disorders and its Diagnosis and treatment that improved using advanced technologies.
  - Specialized program in many universities addressing advanced technologies to study immune disorders in these diseases fits into the national priorities for Egypt, in the field of "Health".
  - Creation and development of a blended-learning certificate and Creation of a blended-learning.

- Following that, it was listed some Stakeholder of IMCert as follows:
  - Staff Educator of IMCert
  - Postgraduates
  - Nonacademic
  - Nonacademic Researchers and Technicians
  - Universities organizations

- IMCert. Objectives also mentioned as follows:
  - Develop interdisciplinary, blended training program
  - Build capacity of staff
  - Support the development of the faculties of scientific background in Egypt
  - Establishment of 5 center of excellences
  - Develop innovative teaching, learning and curriculum materials
  - Build capacity of postgraduates at faculties of scientific background
  - Establishing long-lasting linkages with European Universities
  - Bridging gap between academia and community in facing immune disorders

- IMCert. Project partner including :
- Project coordinator: Al-Azhar University (AZHU)
- European Partners
- University of Leipzig [ULEI]
- University of Lorraine [UL]
- University of Athens [NKUA]
- Egyptian Partners
- Ain Shams University [ASU]
- Damanhur University [DMU].
- Cairo University [CU].
- Aswan University [ASWU]
-

**Introduction and detailed description of project work packages**

**Session 2**

- Introduction of each partner project member in 5 min presentation each.
- An introductory profile of each of the eight work packages and most important items of the project.
- Determine the time required to display each work package separately.
- Display the steps that achieved in the project until now in each Wp.
- Many items were discussed in this part including:
- **Introduction, Preparation, Management and communication introduced by dr. M Mansour determine the points to be mentioned as:**
- Regarding to the project activities, it divided into 8 Work Packages [WPs]as follows:
- WP1 of preparation/management and communication [m1-4]
- WP2 Developing of human capacity [m4-20]
- WP3 Developing of IMCert curriculum [m9-20]
- WP4 Developing of 5 TLC in the partner universities [m5-17]
- WP5 Implementation
- WP6 Quality control and monitoring plan (QCMP)
- WP7 Dissemination
- WP. 8 Management [m1-36]

- Setting Project management and communication plan
- During the kick-off meeting, two administrative bodies will be set:
- The Project Management Board (PMB) and the project coordinator will be heading this board
- Work Package Leaders Board (WPLB) will be led by elected leader during kick-off meeting
- PMB and WPLB responsible to set a template for project management/communication and biannual reporting online communication plan is necessary to maintain effective management throughout the duration of the project. A set of online communication tools (chat, forum, e-mail) will be established. The consortium partners will meet approximately every 4 month in a managerial online meeting for assessing the works.

- Preparation, Management and communication time framework:
- Signing partnership agreement (M2-3)
- Framework for Competences and standards development of IMCert according to situational Analysis (M 3-4).
- Development of human competences
- Selection and training of members of educator selection committee (ESC)(N=5) (M4-5)
- ESC will be trained on curriculum designing using DeCoRe methodology (M5)
- Establishment of 5 TLC
- Specifications of equipment and call of tender (M5-6)
- Quality assurance
- Quality control and monitoring plan (M1-36)
- Dissemination
- Dissemination, and sustainability strategic plan (M1-36)
- Project's website completed (m5-6)

- Management
- Project day to day management and coordination (M1-36)
- Conflicts, risks and risk management (M1-36)
- Financial management (M1-36)
- Assistance to partner organizations with organizing meetings and events (M1-12)

- **Development of human capacity and IMCert curriculum introduced by dr. Reham Hammad, determine the points to be mentioned as:**
- Declaration of stakeholders involved:
  - Staff educator in partner country institutions
  - Technicians to develop skills
  - Community members to gain of informative capacity in immune disorders issues
  - Universities organizations
- Mentioning work package 2 and 3 Leadership as:
- ULEI will train educator selection committee [members selected by partner universities by adopting Deconstruction Construction Reconstruction (methodology)].
- ULEI, UL, NKUA with involvement of CU will share in performing practical training of 50 staff educators.
- NKUA CU will be responsible for technician's course training.
- ASWU will be given the task of Arabic translation of informative material.
- Determine the activities of WP2 in Developing of Human Capacity [M4-M20] as:
- 1$^{ST}$ activity choosing 1 member of each PU to form the educator selection committee [ESC][ 5]

- 2nd activity will focus on ESC selecting 50 academic staff to be trained on designing IMCert.
- 3rd activity will be training of 50 staff educators by ESC on curriculum development using DeCoRe methodology
- 4th activity will be delivering of translated informative Arabic course by ASWU for 1000 of community members Pre/in service biology teachers/ HCW/ industry, water treatment and food processing employee]
- 5th activity will be 50 staff educators to join hands on applied workshops organized by ESC and EU partners to build their capacity needed for technical issues in IMCert with help of CU
- 6th activity will be training 30 technicians in 9 technical workshops.
- Mentioning practical workshops; Polymerase chain reaction (conventional and real time), Cell culture, Enzyme-linked immunosorbent assay, Western blot technique, Sequencing technique: next generation sequencing, Flow cytometry technique, and animal handling.
- Determine the activities of WP3 in Developing of integrated Immune modulation diploma curriculum [M8-M20] as:
- 1ST activity ESC under supervision of ULEI UL and NKUA with involvement of ASU will organize working group to identify the courses suitable for revision to address IMCert through DeCoRe.
- 2nd activity completion of blended modules.
- 3rd activity the development of the IMCert course curriculum weighted to 60 ECTS in addition to the informative part. Modules; [Advanced immunology, Clinical immunology, Genetic and Molecular biology, Immunology tools, Public health, Comparative immunology for animal models and Immunotoxicology]
- 4th activity the development of e Toolkit
- 5th activity The EU with local support of Egyptian universities will organize the procedures for the internal and external validation of the curriculum and the e Toolkit.

**Session 3**

- **Developing of teaching and learning centers [TLC] and programme implementing introduced by dr. Mustafa Ahmed determine the points to be mentioned as:**
- Clarifying the assumptions of WP4 as:
  - Egyptian universities will supply a secured space for TLC.
  - Egyptian universities will provide the required furniture, materials, equipment and other necessities in a timely manner.
  - Infrastructure both human and materials in-place to permit planned activities.
- Ensuring that development of 5 TLCs of excellence in the 5 Egyptian universities.
- Providing e-learning and research equipment for practical competence (accommodate >2000 students).
- Emphasized the importance of TLCs that serve both students and staff along and beyond the completion of the IMCert project.

- Mention WP time plan that will take 15 months, starting from 15 May of first year and ending up in second year in 14 August.
- Defining the specifications and the procedures for the purchase of equipment.
- Defining detailed descriptions on equipment (types, software& technical characteristics) by stakeholders.
- Ensuring that call for one joined tender for purchasing all equipments.
- Designing activity plan services for students and staff.
- Developing structure of 5 TLCs, activity plan installing of equipment, integration of quality assurance to equipment, and preparation of e-class rooms by ending of the first year.
- Giving detailed descriptions of the TLCs, their functions, operation, services to students and staff.
- Mention quality assessment of equipment.
- Ensuring that labelling equipment with E+ stickers (to be printed beneficiaries).
- Organizing local trainings for academic teaching staffs and postgraduates on e-learning class room.
- Mention no. of workshops [N=4, each for 1 day].
- Organization by P7 (ASWU).
- Clarifying the assumptions of WP5 as:
  - It is necessary to run a few pilot courses before the full-scale implementation of IMCert.
  - Guidance of the EU partners in all implementation steps.
  - Timely availability of human and technical resources.
  - Full institutional support and facilitation.
- Mention small-scale piloting (2-3 courses) leading to evidence-based evaluation before large-scale implementation of IMCert.
- Organizing the piloting of 2-3 selected IMCert courses in Al-Azhar University.
- Figuring out what best fits the postgrads? are the educating staff competent enough? and Is the content of the courses satisfactory or not?
- Using both qualitative and quantitative methodologies can provide data that demonstrates how can the IMCert courses foster the objectives.
- Mention their importance that will give detailed descriptions on the procedures, methodologies and outcomes for IMCert implementation.
- Confirming that, P1 will organize the blended learning strategies for the full implementation during which diagnostic, formative and summative evaluation methods.
- Provide detailed information about the organization of the blended learning environment, including the human, technical and learning resources needed to carry out successfully the implementation of the immune modulation programme.
- Following-up the blended learning strategies, the full (large-scale) implementation of the IMCert programme will start in Al-Azhar University.
- AZHU will support the (ESC + 50 trained educational Staff) in all steps of the training's implementation.

- The report will present the results in terms of the impact of postgraduate's students and staff took part in the capacity building process.
- **Quality plan for the implementation of the project, monitoring and evaluation introduced by dr. Hossam Elsayed determine the points to be mentioned as:**
- Clarifying the importance of the regular review of the project activities, supported by a system of quality assurance will ensure that they are appropriate and compliant with the mission statement and the curriculum.
- Emphasis that the Internal and external evaluators should have competencies to make the job accomplished and on the transparency in self-evaluation in order to persuade perfection.
- Ensuring that the quality assurance reports will be collected in timely manner and the assessment will be carried out along the whole project levels from kick off meeting.
- These activities will be largely based on the quality control and monitoring plan [QCMP] which adopted in the early stages of the project to support project coordinator and WP leaders in ensuring highest quality of project outputs, activities and results, as well as to support decision making by delivering necessary evidence to introduce any significant changes, may be needed.
- It was agreed that ASU will be the leader of this work package under guidance of ULEI, UL & NKUA.
- They will supervise the selection of the quality control and monitoring team [QCMT] from stakeholders, the local quality assurance expert [internal evaluator], and the [external evaluator] who will be an expert in evaluations of European-level projects in the field of education in order to get transparent evaluation.
- The external evaluator will be in close contact with the project coordinator and make sure that he is updated on what is going on throughout the three years.
- He will produce an evaluation report that will evaluate the quality indicators listed before and the specific quality control and management plan.
- Key Performance Indicators (KPIs) will be quantifiable and outcome-based statement to measure if we are in track to meet our goals or objectives
- Monitoring tools at the outcome level will include; Surveys, outcome mapping and significant change of qualitative assessment
- Finally, the deliverables will contain the results biannual internal and external progress reports, including main indicators of progress across all WPs such as: appropriate and timely feedback; surveys; convergence of study programs; quality of the questionnaires for the multi-stakeholder survey; number of respondents; number of stakeholders' interviews; number of staff trained; number of syllabi and course modules developed and implemented, ….. etc.
- For project outputs, performance indicators will be related to user demand, user satisfaction, efficiency, effectiveness, number of monitoring visits; staff involved in internal peer-reviews; usability and visibility of the website; information flow and level of communication; number of publications, events, training materials.
- **Dissemination and exploitation introduced by dr. Alya Mashaal determine the points to be mentioned as:**

- Clarifying and explaining the definition of Effective dissemination as making information available and usable to various audiences through a wide variety of channels or formats.
- Mentioning its importance to addresses the activities and actions planned to promote IMCert. diploma programme.
- mentioning its role in diploma sustainability after the funding has finished.
- listing 3 types of dissemination; dissemination for understanding concerning students & staff, dissemination for awareness concerning community, and dissemination for action concerning decision makers.
- Emphasizing dissemination role related to general IMCert. objectives and its covering across all IMCert. WPs.
- Emphasizing presence of high motivation of all partners and collaboration between them to achieve the dissemination of the launching of immune modulation diploma and its outcomes.
- Emphasizing the covering of every public events of the project held in Egypt and Europe will be act through dissemination.
- It will be provided in English and Arabic.
- It was agreed that P5; Damanhur University [DMU] will be the leader of this work package under guidance of ULEI, UL & NKUA.
- Ensuring that each partner must have been full dissemination file for its organization, including all activities and reports. Rather than and providing it to project PI.
- Displaying dissemination work plan that covering all project time starting from m1 to m36.
- Displaying all dissemination activities and their role in strengthening the final impact of the project both at the local and international level.
- Preparing numbers and relevance of topics covered from flyers and brushers in dissemination.
- Emphasizing IMCert. is widely disseminated to publicity and communication activities at all the project phase through different media and communication resources.
- Concerning dissemination of two project's Official websites that will be provide an information about the project itself and its activities including details of partners, objectives, working papers, public deliverables, and TLCs equipment specification and call for tenders is also published on official websites in m6
- Presenting the importance of dissemination in E-Tool kit Integration to disseminate the digitised tools developed specifically for this project, including the courses dissemination in project website under supervision of European countries.
- Publicity of the diploma on the national and international conferences that will be held at the same weeks of the consortium managerial meetings once in Germany and another in France.
- Increasing publication of Immune modulation topic in the conferences & Impact factor record.
- Mentioning dissemination target groups.

- Finally, mentioning and displaying dissemination achievements including seminars, webinars, questionnaires, and advertising the project in newspapers and social media pages of some interested faculties.

**Day Two**

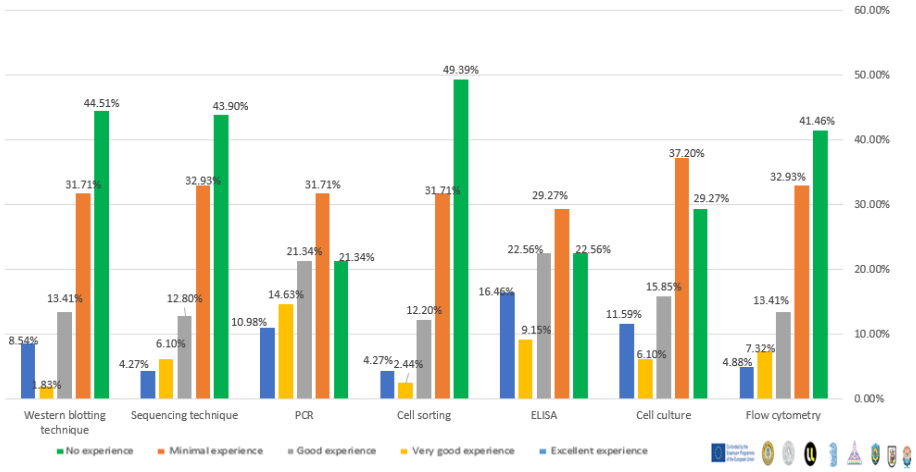
**Session 4**

- **Overview of grant agreement and Partnership Agreements introduced by dr. M Mansour determine the points to be mentioned as:**
- Grant Agreement Outlines: This section was discussed Partnership Agreement that is a commitment complementary to the Grant Agreement Considering the following:
- A copy of the Partnership Agreement(s) must be provided to the Agency within 6 months of the signature of the Grant Agreement.
- comprehensive description of Rights and obligations, Roles and responsibilities, Management and governance, Financial management وBudget structure, Remuneration policy, Payment modalities, Reporting mechanism, Conflict management, Communication strategy, Sustainability strategy and any other relevant topic
- Following that, it was listed some Examples of possible annexes as follows:
- Annex V - link to Erasmus+ Program Guide
- Annex VI - link to FAQs
- Annex VII - Individual Bank account of each beneficiary organization
- Annex VIII - Internal Reporting forms
- With regard to financial funding, it has been addressed to reduce the budget for both: Travel and Stay Costs for Decrease P8 (NKUA), Decrease P2 (ULEI), Decrease P3 (UL).
- **Budgetary and financial management introduced by dr. Raghda Abdellatif stated in the general conditions of the grant agreement/grant decisions and applies to all beneficiaries in points to be mentioned as:**
- We explained the Budget Structure which Consists of Unit Cost and Actual Cost.
- We explained the General provisions on the eligibility of costs.
- We explained the staff cost and their variables which include the type of staff category, the country in which the staff member is employed, and the number of days worked for the project.
- We cleared the supporting documents for staff cost.
- We explained the travel costs and costs of stay and their variables which include travel distance (travel costs), duration (costs of stay), and type of participant (staff/student).
- We cleared the supporting documents for the travel costs and costs of stay.
- We explained Which exchange rate should be applied.
- We explained the Tendering procurement of good and service.
- We explained Subcontracting is an implementation of specific tasks, by the third party, to which a contract is awarded by one/several beneficiaries.
- We showed the distribution the grant by organization (in EUR).
- We showed annual and biannual financial reports that will be prepared.

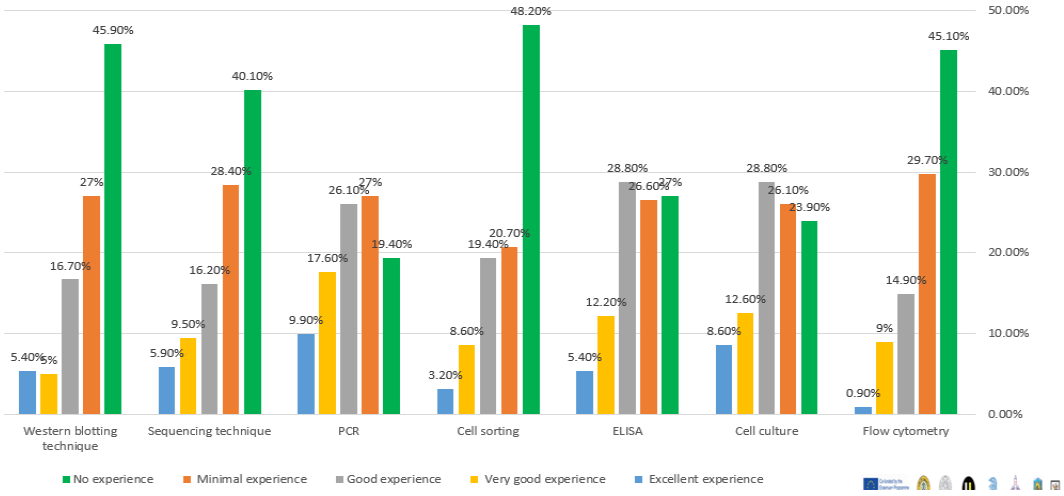
**Session 5**

- **Assessment of the progress of the IMCert. Stakeholders' Surveys and Mapping stakeholder needs & inputs; for postgraduates– teaching Competences introduced by dr. Reham Hammad, determine the points to be mentioned as:**

- We represented the results of stakeholders' surveys according to which the framework of competences will be performed and numbers of questionnaires responders:
- Regarding numbers of responders;
  - 164 of Academic Staff responded
  - 222 of postgraduates responded
  - 100 of community members responded [not stated here]
- <u>Regarding the academic staff</u>
- Their previous experience in immunology tools were as coming




- Regarding measuring their interest in joining the IMCert 47.5% were very interested and 36.6 would try to make time to join while 17.7% were interested but will not be able to join
- Regarding Academician field of Interest in IMCert topics the clinical immunology has taken the top interest while immune dosages was of least interesting
- PCR followed by ELISA then cell culture were most interesting diagnostic tools involved in IMCert. For Academician reflecting the comfort zones of previous experiences
- <u>Regarding the postgraduates</u>
- Their previous experience in immunology tools were as coming




- Regarding measuring their interest in joining the IMCert 40.5% were very interested and 34.7% would try to make time to join while 17.1% were interested but will not be able to join
- Regarding their believe that environmental factors and climate nature are capable to amplify immune disorders most of postgraduates had a solid belief
- Cell culture followed by PCR then ELISA were most interesting diagnostic tools involved in IMCert.
- Responding to adequate ratio both staff and postgraduates suggested for the theoretical: practical to be proposed as 1: 2 ratio.
- **Good Practice and main recurrent mistakes introduced by dr. Alya Mashaal determine the points to be mentioned as:**
- Listing good practices of IMCert.
- Mentioning good practices of specific activity of the project concerning: National Erasmus office monitoring through 3 phases, National Erasmus Offices monitoring and questionnaires.
- National Erasmus Offices Monitoring – Materials that will be to be submitted to NEOs including, accurate data on institution project team, information on larger events and conferences, information on all relevant outcomes/outputs, and minutes of the meetings.
- Mentioning useful remarks to be aware of ineligible costs (e.g. vat, hospitality costs, registration fees for courses, seminars, symposia, conferences, congresses, etc.)
- Clarifying that for all questions that not clearly covered by available online contact National Erasmus Office.
- Clarifying that any changes during the project implementation have to be reported to and/or need to be approved in advance by EACEA.
- Displaying any challenges that may be exposed during project implementation.
- Displaying communication phases start from planning to evaluation and ensuring aspects of EU visibility strategy including its quality conditions.

- Emphasizing that insertion of Erasmus+ and project logos on each document and instrument that belong to the project rather than disclaimer statement.
- Defining the impact and ensuring focus on project impact at every phase of the project.
- Finally, mentioning what the agency expects that including project sustainability after the end of the project and institutional ownership.

**Session 6**

- **Reporting in CBHE projects introduced by dr. Reda Suef and dr. M Selim determine the points to be mentioned as:**
- We discussed various forms of penalties that can be applied in a variety of situation, including:
  - Poor or partial implementation, the grant cost will be reduced up to 75% depending on the scoring at final report assessment stage
  - Noncompliance with EU visibility requirement this led to reduction of 20% or the maximum grant
  - Breach of contractual obligations leading to 20% reduction.
- We listed some good financial management practices supporting submission of a good financial report, as follows:
  - the payments: should be within the frame of the work of the project and all the payments, via the banking statement, traceable
  - Supporting documents for the final report: All beneficiary must have a proper and ordered archiving system for supporting documents. Documents have to be submitted numbered and divided per budget heading and per partner organization
- For Narrative Part of the Report (progress and the final), it should be:
  - Including all the documents and available on agency website in the beneficiary's space
  - submitted an in an electronic form
  - following the list of guiding questions that are available in CBHE electronic explanatory note.
  - Reports are prepared jointly by the consortium members, but the final version of the narrative report is responsibility with the coordinator to the agency
- We stated a few recommendations for good narrative reports, including:
  - Answer the questions of the « CBHE e-reports explanatory note »
  - Concentrate on what has been achieved (no copy-pasting from the application!)
  - Provide clear information on achieved results (with links to outputs with open access)
  - Be precise and use clear indicators (nr of courses, credits, students, participants, etc.), with reference to Logical Framework Matrix
  - Give concrete information on sustainability of project results

- Concerning the Erasmus+ Project Results processing:
  - The results are equal to tangible outputs of the project activities such as a courses curriculum teaching material databases publication that could be used by other person or community
  - Results reviewed by the Agency before publication
  - Approval of results is a condition for approving the final report
- We classified the following principles of audits and the responsibilities of external auditors as follows:
  - Projects may be audited by external auditors for a period up to 5 years from the project closure
  - Auditors will perform audits on the premises of the project coordinator or other beneficiaries
  - Auditors will check in detail that all relevant supporting documents (originals) are available, that costs are recorded in the accounting records and that payments have been made correct
- We give Some aspects to how to prepare good reporting for our project throughout the project implementation and at the end of our project (IMCERT)
- We speak about some good practice in financial management that will help us to submit good financial reports and some brief information on audit after the end of our project (IMCERT)
- We start with the financial monitoring and reporting and how to report the costs of the finances
- There are two types of reporting 1- progress report during the project implementation final reports
- There is a tool that is called the financial statement which is an excel file from ERASMUS which is the main tool for reporting, planning and monitoring the costs for the project we downloaded from the EICIA website and we will follow the instructions included before submitting our reports.
- The financial statement must be signed by the legal representee of the coordinating institution
- The financial statement must be submitted by the coordinating institution, but all beneficiaries are responsible for information and data declared
- The financial statement information should be correct, clear, complete, and detailed and included all staff costs, travel cost, costs of stay, equipment costs, subcontracting costs and exceptional costs
- All costs declared in the financial statement must be incurred during project
- All costs should be verifiable and recorded in the accounting records of each beneficiary.
- All costs documents must be available upon request.
- The calculation of the final grant at the final report stage, several layers of assessment will be checked at financial level as a financial statement also looking for both eligibility and expenses that have been implemented in parallel analysis of the narrative part of the report and results also be assessed

- In some cases, analysis led to potential penalties applied on maximum grant in the end of the final grant will be: The lowest value between the maximum grant reduced by penalties and result of the examination
- We check that our project doesn't exceed the budget in any task.
- 15-So that final report is not only after the end of the project, but it observes each step in the project to give good picture to our project at the end of the project.
- **Project committee election:**
  **Project managerial board**
  Prof. Dr. **Mohamed Mansour Saad Farag, project coordinator**
  Dr. **Reham Hammad**
  Prof. Dr. **Ulrich Sack**
  Prof. Dr. **Rachid Solimani**
  Prof. Dr. **Eleni Efthimiadou**
  Prof. Dr. **Mohamed Hafez**
  Prof. Dr. **Khaled Abo Shanab**
  Prof. Dr. **El Hamy Tarabees**
  Prof. Dr. **Shazly Baghdady**

## Project Work package leaders

| WPs | University | Members |
|---|---|---|
| **Preparation / Communication (WP1)** | AZU | Dr. Reda Sweif and Dr. Mohamed Selim |
| | ASU | Prof. Dr. Nadia Hamdy |
| | CAU | Prof. Dr. Mohamed Mahmoud Hafez |
| | DMU | Dr. Amal Attia |
| | ASWU | Prof. Dr. Adel Abdelfaheem Mohamed |
| **Development of human capacity (WP2)** | AZU | Prof. Dr. Reham Hammad |
| | ASU | Prof. Dr. Rolla Melad |
| | CAU | Prof. Dr. Zeinab Korany Hassan |
| | DMU | Dr. Amal Attia |
| | ASWU | Dr. Yasmin Mahran |
| **Developing of curriculum (WP3)** | AZU | Prof. Dr. Reham Hammad |
| | ASU | Dr. Shereehan Gala |
| | CAU | Prof. Dr. Nadia Al-Gandy |
| | DMU | Prof. Dr. Sara Magdy |
| | ASWU | Prof. Dr. Nady Kamal Aziz Gerges |
| **Developing of TLC (WP4)** | AZU | Dr. Mostafa Bahnasawy |
| | ASU | Dr. Ahmed Abbas |
| | CAU | Dr. Salma Mahmoud |
| | DMU | Dr. Mohamed Abd-Alhaseeb |
| | ASWU | Prof. Dr. Noura Sharkawi Abazeid |
| **Implementation (WP5)** | AZU | Prof. Dr. Mohamed Mansour |
| | ASU | Prof. Dr. Khaled Abo Shanab |
| | CAU | Prof. Dr. Nadia Al-Gandy |

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| | DMU | Prof. Dr. Sara Magdy |
| | ASWU | Assist. prof. Shazly Baghdady Ali Ahmed |
| **Quality control (WP6)** | AZU | Dr. Hussam El-Ashmawy |
| | ASU | Prof. Dr. Rolla Melad |
| | CAU | Dr. Salma Mahmoud |
| | DMU | Dr. Abd El-Aziz Zidan |
| | ASWU | Prof. Dr. Nady Kamal Aziz Gerges |
| **Dissemination & Sustainability (WP7)** | AZU | Dr. Alya Mashaal |
| | ASU | Prof. Dr. Nadia Hamdy |
| | CAU | Dr. Hany Kamal |
| | DMU | Dr. Mohamed El-Ghazaly |
| | ASWU | Prof. Dr. Ahmed M, El Otify |
| **Project Management and Communication (WP8)** | AZU | **Project managerial board** |
| | ASU | |
| | CAU | |
| | DMU | |
| | ASWU | |

- **Closing remarks**

# 2nd Managerial Meeting of IMCert

In 3rd of March the 2nd managerial meeting of IMCert took place, headed by the Project coordinator prof. Mohamed Farag, Al-Azhar University with the presence of

**Managerial representatives of the European Universities**

- Prof. Rachid Solimani and Prof. Claude Lambert, University of Lorraine, France
- Prof. Ulrich Sack and Dr. Sandy, University of Leipzig, Germany
- Prof. Eleni Efthimiadou, National and Kapodistrian University Athens, Greece

**Managerial Representatives of the Egyptian Universities**

- Prof. Reham Hammad, Al-Azhar University
- Prof. Khaled Abo Shanab, Ain Shams University
- Prof. El Hamy Tarabees, Damanhur University
- Prof. Shazly Baghdady, Aswan University
- Prof Mohamed Hafez apologized for attendance and instead Cairo University was represented by Prof. Zeinab Korany.

**The topics of the meeting were discussed as below**

i. **Travelling to Greece date and logistics**

**First:** Travelling date to Greece was decided to take place in 22nd -25th May 2022 to establish the European decisions about the IMCert curriculum.

**Second:** Discussion of the logistics took place, Prof Eleni, Greece recommended a Ilisia Hotel

Attached below is the booking link of the hotel

https://www.booking.com/hotel/gr/best-western-ilisia.el.html?aid=311101;label=best-western-ilisia-Crloox5ZEy6Pz69EDEAHdgS266325532023%3Apl%3Ata%3Ap1%3Ap2%3Aac%3Aap%3Aneg%3Afi%3Atikwd-1597005574%3Alp9061578%3Ali%3Adec%3Adm%3Appccp%3DUmFuZG9tSVYkc2RlIyh9YQB9rNbOPxnnfNMZF0KQpQY;sid=a675a5e809ddc5142d2d62cc32839476;dest_id=-814876;dest_type=city;dist=0;group_adults=2;group_children=0;hapos=1;hpos=1;no_rooms=1;req_adults=2;req_children=0;room1=A%2CA;sb_price_type=total;sr_order=popularity;srepoch=1646321011;srpvid=31286c39c9fb0305;type=total;ucfs=1&#hotelTmpl

**The following accommodation description will soon be available in Ilisia Hotel**

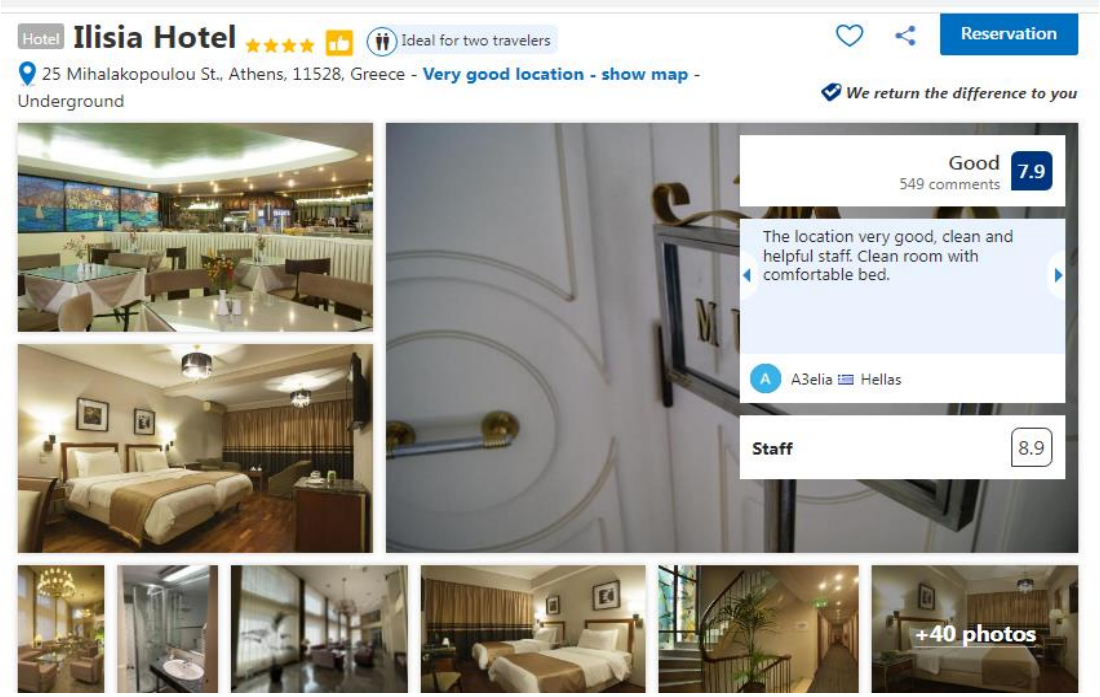
Family owned and operated since 1974, the Ilisia Hotel features 91 tastefully appointed rooms in the heart of Athens, offering easy access to the Greek Capital's most significant points of interest. Major tourist attractions and museums, including the Athens Concert Hall and National Gallery, Parliament and Syntagma Square, the US Embassy and the cosmopolitan Kolonaki district, are all within walking distance.

We offer a variety of amenities for our guests, including Free Wi-Fi and Parking (subject to availability), a Continental style Breakfast Buffet and Complimentary Mini Bar, while our

friendly front desk staff is available 24 hours a day. For our Business clients, dedicated Conference, Seminar and Catered Event facilities for up to 120 guests are also available. Couples especially like the location - they rated it **8.7** for a two-person trip.

**The most popular benefits**

- Free Wi-Fi Internet access
- Free parking
- Family rooms
- Non-smoking rooms
- 24-hour front desk
- Room service
- This property offers on-site currency exchange.




**Third:** Protocol for Arrivals in Greece was sent by prof Eleni https://travel.gov.gr/#/
Welcome to Greece!
All travellers must complete their PLF before entering the country, providing detailed information on their point of departure, the duration of previous stays in other countries, and the address of their stay while in Greece. In case of multiple stays, they are required to provide the address for the first 24 hours at least. One PLF should be submitted per family.
•Travellers will receive the PLF with their unique Quick Response (QR) code via email (the QR code will be provided in a link in the email(

The PLF can also be found on the Visit Greece app and at travel.gov.gr. It is strongly recommended that all visitors download the Visit Greece app (GDPR compliant) for free, prior their arrival in Greece.

Note to all travelers: The official portal of the Hellenic Republic to complete the required

PLF is travel.gov.gr.
Any other websites that act as intermediaries, are not approved and are considered to be fraudulent. We therefore advise travelers

**EQUIREMENTS FOR VISITORS**

**Before arrival:**
Tourists are required to fill in the Passenger Locator Form (PLF) before entering the country. For more information, please click here.
Prior to departure, all travellers older than 5 years old must ensure that they carry an acceptable form of certification of their health condition, as stated above.

**Upon arrival:**
All travelers are subject to random obligatory Covid-19 tests upon arrival.

If found positive, a five (5) day quarantine under supervision is required either at home or at a designated temporary residence assigned by the appropriate authorities. The quarantine period starts the next day of their positive diagnosis. Following the five (5) day period and if the symptoms have receded and the travelers are feverless for 24 hours without the use of antipyretics, they are released from quarantine. If the fever insists, the travelers remain in isolation until the fever has fully receded. The above travelers must wear high protection breathing mask.

**ii. Selection of project members traveling to Greece**

Selection of the staff educators who will travel to Greece took place and accordingly the decision was taken by the managerial board to include the managerial members and the active participants who shared in the curriculum development only.

Elected names by the projected managerial board according to the contribution in curriculum development were;

**Al-Azhar University**

1. Prof. Dr. Mahmoud Seddik Hassan Abd El Naby, Vice President of Al-Azhar University for Postgraduate Studies and Research
2. Prof. Dr. Mohamed Mansour Saad Farag, Project Coordinator and staff educator selection committee member
3. Prof. Dr Reham Hammad, staff educator selection committee member and Work Package leader, leader of curriculum development and **Flowcytometry** module coordinator
4. Dr Mona Eldosoky **Molecular** module coordinator
5. Dr Fatma Elzahraa Abdelhakam **Immunotoxicology** module coordinator

**Ain -Shams University**

1. Prof. Dr. Khaled Abo Shanab, Ain Shams University coordinator
2. Prof. Dr. Nadia Hamdy, member of staff educator selection committee and **Functional Genomic module** Supervisor
3. Dr. Sherihan Abdel Hamid, **Functional Genomic** module coordinator

4. Prof. Dr. Ghadir El-housseiny, **Biotechnology** module coordinator
5. Dr. Amr Shaker **Biotechnology** module member

**Cairo University**

6. Prof. Dr. Mohamed Hafez, Cairo University coordinator
7. Prof. Dr. Zeinab Korany, member of staff educator selection committee
8. Prof. Dr. Sally Elfishawi **Clinical immunology and immunopathology** module coordinator
9. Dr. Merihan Fouda **Clinical immunology and immunopathology** module member
10. Dr. Randa Osman **Flow cytometry** module member

**Damanhur University**

1. Prof. Dr. El Hamy Tarabees, Damanhur University coordinator
2. Prof. Dr. Asser Ghoneim **Comparative immunology** module coordinator
3. Prof. Dr. Mohammad Abd-Alhaseeb member of **Comparative immunology** module
4. Dr. Hisham Nematalla **Biotechnology** module member
5. Dr. Tarek Okda **Molecular** module member

**Aswan University**

1. Prof. Dr Shazly Baghdady, Aswan University coordinator
2. Prof. Dr Nady Aziz, member of staff educator selection committee
3. Dr Rasha Samir **Clinical immunology and Immunopathology** module member
4. Dr Shaimaa Abdelrheem **Public health** member

### iii. Selection of the project external evaluator

The decision was taken by absolute majority of members to choose Prof. Dr. Michael Kirschfink as external evaluator of the project. The respected professor was proposed by Prof. Ulrich Sach.

The CV of the respected professor chosen is provided with the managerial meeting report.

### iv. Annual report

Discussion took place about filing the annual report. The filling of number of attendees was brought up due to total absence of 5 out of 7 Aswan University members from the activities of the IMCert project. For a third chance given to overcome their absence prof. dr. Mohamed Hafez the representative of Cairo University notified the project coordinator prof. dr. Mohamed Farag, that he proposes to travel to Aswan to provide the needed building of capacity of the Aswan staff educators to enable them to continue in the project.

- Another online meeting between Cairo University and Aswan University coordinators and members took place at Saturday, 5 March 2022, to discuss the capacity building of Aswan staff educators. Based on this meeting, it was agreed to hold the practical and training courses at Aswan University from 12-17 March 2022, to include the same project workshops which were performed before at Cairo University according to project plan.

**v. Updating the dissemination plan**

In order to increase the level of dissemination before postgraduate announcement of IMCert implementing phase and to overcome the low announcement rate students in faculties follower number to IMCert project Facebook page.

**vi. Implementing a google drive for managerial document**

A google drive containing all project data was proposed by Dr. Reham Hammad and approved by PMB.

## 3rd Managerial Meeting of IMCert

In the period between 21st -26th May 2022, the 3rd managerial meeting of IMCert took place in Athens, Greece, headed by the Project coordinator prof. Mohamed Farag, Al-Azhar University with the presence of

**Managerial representatives of the European Universities**

- Prof. Rachid Solimani and Prof. Claude Lambert, University of Lorraine, France
- Prof. Ulrich Sack and Dr. Sandy, University of Leipzig, Germany
- Prof. Eleni Efthimiadou, National and Kapodistrian University Athens, Greece

**Managerial Representatives of the Egyptian Universities**

- Prof. Reham Hammad, Al-Azhar University
- Prof. El Hamy Tarabees, Damanhur University
- Prof. Shazly Baghdady, Aswan University
- Prof. Zeinab Korany, Cairo University

**The topics of the meeting were discussed as below**

- IMCert activities and deliverables
- Modules distribution in two semesters
- Project dissemination
- IMCert national and international conferences
- Technical Training course opened for 30 instrument technicians
- Developing IMCert e-Toolkit and in-service curriculum
- Establishment of 5 TLC with its e-class rooms& Installing Equipment's
- Quality control and monitoring plan
- Next managerial meeting in Lorraine University

# 4th Managerial Meeting of IMCert

In the period between 23rd -28th September 2022, the 4th managerial meeting of IMCert took place in Metz, France, headed by the Project coordinator prof. Mohamed Farag, Al-Azhar University with the presence of

**Managerial representatives of the European Universities**

- Prof. Rachid Solimani and Prof. Claude Lambert, University of Lorraine, France
- Prof. Ulrich Sack and Dr. Sandy, University of Leipzig, Germany
- Prof. Eleni Efthimiadou, National and Kapodistrian University Athens, Greece

**Managerial Representatives of the Egyptian Universities**

- Prof. Reham Hammad, Al-Azhar University
- Prof. Khaled Abo Shanab, Ain Shams University
- Prof. El Hamy Tarabees, Damanhur University
- Prof. Shazly Baghdady, Aswan University

**The topics of the meeting were discussed as below**

- IMCert activities and deliverables
- Project implementation (pilot and full implementation)
- IMCert e-Toolkit
- Egyptian universities visits
- External evaluator feedback and recommendations
- Next managerial meeting in Leipzig University

# Quality of deliverables according to qualitative, quantitative and time mannered indicators

| Outputs (tangible) and Outcomes (intangible) | Time manner indicators | Qualitative indicators | Quantitative indicators |
|---|---|---|---|
| WP1: Preparation/management/communication | | | |
| • D1.1 Kick-off meeting | 8-9 March 2022 | - held through an online meeting – conference hall at Al-Azhar University<br>-the kick-off minutes were discussed | -The number of attendees was 62 members from all European and Egyptians partners<br><br>-Project Work package leaders in each of the 5 Egyptian Universities were nominated |
| • D1.2 Consortium agreement plan | May 2021 | Partnership Agreement plans were signed | 7 partnership agreement were prepared for the Egyptian and European universities |
| • D1.3 Subcontracting outlined | April- May 2021 | Service Agreement contract have been outlined and signed with several agencies | Seven approved and assigned Partnership Agreement plans between Al-Azhar University (project coordinator) and the partner universities in the project Cairo, Ain Shams, Damanhur, Aswan, Lorraine, Leipzig, and NKUA Universities |
| • D1.4 Mapping stakeholder needs inputs | January – March 2021 | -surveys for Academic staff, post grads and community members were carried out<br>as questionnaires around immunity using Google Forms and the generated link was shared on social media<br>- Report on staff educators/postgraduate students and other stakeholders | Workplan: number of 500 representativeness of stakeholders' involvement in situational analysis<br>Actual: 164 academic staffs, 222 postgraduates and 100 community members have responded to this survey. |
| • D1.5 Stakeholders' survey for postgraduates– teaching Competences | January – March 2021 | -detailed reports of the surveys provided prove competent<br>staff for IMCert teaching | Complete analyses were done for the questionnaires of the following categories:<br>1- For Academic staff:<br>2- For postgraduates:<br>3- For Community members: |
| • D1.6 competences and standard Framework | April – May 2021 | - IMCert. teaching standards and competences framework done<br>-Framework of Compliance with EU curriculum standards.<br>-Reports on identified IMCert. Competences provided | Approved and assigned framework of competencies of the developed IMCert. Program |
| • D1.7 project managerial bodies and communication plan created | March- April 2021 | - the IMCert managerial committee developed over two weeks a timed communication plan with all managerial bodies to settle different ways of communication | Project Management Board (PMB) was elected, and the communication plan was established from very beginning of the project |

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| | | A template for project management / biannual reporting & communication time-plan done<br>- Minutes from managerial progress meetings | |
| 2. WP.2. Development of human capacity | | | |
| • D2.1: select and train ESC on DeCoRe [ESC][N=5] | April – June 2021 | - Training was carried out online together with the 51 staff educators in September 2021, February 2022, and March 2022 and not as scheduled due to COVID pandemic | Each partner university has chosen 1 expert member of their university specialized in subject of interest of IMCert. to form the educator selection committee [ESC] [N= 5] members |
| • D2.2 Selection of 50 staff by ESC | August 2021 | The interview was held at Al-Azhar University, from 3rd- 5th August 2021. | • 50 out of 150 staff educators were successfully selected by ESC to develop IMCert.<br>• Backgrounds of the 50 staff educators were as follows: Medicine Faculty (n=21), Pharmacy (n=18), and Basic Sciences (n=11). |
| D2.3. Training of 50 staff on IMCert. curriculum designing | September 2021- March 2022 | - EU reports on quality of training of staff educators in curriculum designing | • 50 staff educators (17 male and 33 female) together with the ESC members were trained during 3 workshops on curriculum designing and integration.<br>• All data concerning the workshops are also available on the website https://imcert.azhar.live/ |
| D2.4. Training of 50 educators on practical issues of IMCert. | September 2021- May 2022 | - quality of workshops, and trainings conducted from certificates of attendance and questionnaires filled.<br>All workshops included both theoretical and practical sessions related to each technique.<br>At the end of the workshop, the participants were able to address the upgrading of practical advanced training and gaining of practical skills | • 50 potential staff educators from 5 Egyptian Universities were successfully well trained, in order to make sure that the staff educators gained capacity in teaching and learning in the technical field of immune modulation involved and in pathogenesis and outcome of disease of high concern in Egypt in relation to the environmental hazards 5 practical workshops extending from 3-5 days each.<br>• Feedback and assessment of the work shops were done to ensure the quality of the material given. All educating materials were given to the participants. |
| • D2.6 Technical course for 30 Lab. Technician | July- September 2022 | - ESC set-up interviews for the selection of 30 technicians to be trained for TLCs.<br>- EU reports on Number and quality of training of technicians trained | • 30 out of 55 technicians were successfully selected by ESC for TLCs.<br>These technicians were from the University of Al-Azhar, Cairo University, Ain Shams University, Aswan University, and the University of Damanhur. |
| • WP.3 Developing IMCert curriculum | | | |
| • D3.1 Selection of 30-40 courses to be revised and developed | September 2021- March 2022 | • Selection of courses to be revised and | Based on the previous trainings and workshops, the courses and the curriculum were integrated to fit pharmacists, |

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| | | developed was based on the results of the questionnaire of the postgraduates as our stakeholders. | physicians and scientists, applying the framework of competence to be as following: Basic Immunology, Biotechnology, Comparative immunology, Molecular biology, Public health, Functional Genomics, Clinical immunology and Immunopathology, Flow cytometry, and Immunotoxicology. |
| • D3.2 Developing of immune modulation course syllabi and course modules | March 2022- May 2022 | -Reports online streaming Courses and modules Uploaded | • Defined and approved nine-course modules including both practical and theoretical in teaching, and assessment as the following:<br>1- Basic Immunology (6 ECTs)<br>2- Biotechnology (8 ECTs)<br>3- Comparative immunology (4 ECTs)<br>4- Molecular biology (8 ECTs)<br>5- Public health (6 ECTs)<br>6- Functional Genomics (6 ECTs)<br>7- Clinical immunology and Immunopathology (10 ECTs)<br>8- Flow cytometry (6 ECTs)<br>9- Immunotoxicology (6 ECTs) |
| • D3.3 Developing IMCert e-Toolkit and in-service curriculum | April – October 2022 | • The e-toolkit is being prepared by Lorraine University in coordination with Al-Azhar University and Damanhur University, to make sure that there is proper academic support behind it.<br>• The e toolkit is a collection of related information, in the form of resources, integrating innovative enabling learning tools, teaching and methodologies developed specifically for the IMCert. project and/or gathered through other sources. | Defined IMCert e-Tool kit and in-service curriculum however, this is still in progress. |
| • D3.4 Validation and Accreditation | June 2022- till now | This will give a detailed description of the report done to evaluate the framework guidelines and how this was used during the development of IMCert. and giving information about procedures, methodologies, and outcomes for accreditation and approval of the integrated immune modulation courses curriculum program as well as the integrated immune modulation courses e-Tool kit which will be streamed in project website. | Accreditation is still to take place in the Al-Azhar University to take approval of implantation from Al-Azhar Supreme Council this will be accompanied by approvals of higher education of ministry in other 4 Egyptian partner Universities |

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| WP4 Developing (5TLC) of excellence | | | |
| D4.1; specifications and call for tender of TLC equipment | June 2021-September 2022 | • During the first 6 months, TLC committee was established, where each of the 5 participating Egyptian universities has nominated and assigned a member to be responsible for the TLC work package. | • The technical specifications of respective equipment were finally approved by the European partners.<br>Tender process and official release in the 5 Egyptian Universities [AZHU, DMU, ASU, ASW, CU]. |
| • D4.2 Establishment of 5 TLC with its e-class rooms &Installing Equipment's | August 2021-till now | - modifying the technical specifications of some of the equipment's and proceed to the call for tender due to global economic changes<br>-Report on the installation of the TLC laboratories.<br>- Reports on TLC progress in equipment's installing and functioning | -5 TLCs established, 1 in each partner university |
| • WP6–Quality Assurance | | | |
| • D6.1 -QCMP | January 2021-till now | • The quality control and monitoring plan (QCMP) was established and approved to ensure the quality assurance of all the activities of the IMCert. program as well as to evaluate it.<br>• The QCMP was adopted in the early stages of the project.<br>• The QCMP was and still support the project coordinator and WP leaders in ensuring highest quality of project outputs, activities, and results, as well as in improving project performance.<br>• It was supporting the decision making by delivering necessary evidence to introduce any significant changes, should they be needed. | • Establishment and approval of QCMP team which is consisted of:<br>7- Members of Ain Shams University (Head of QCMP team):<br>- Prof. Dr. Khaled Aboshanab<br>- Dr. Ghadir El-Housseiny<br>- Dr. Sherihan Galal AbdelHamid<br>- Dr. Amr Shaker<br>- Dr. Mohamed Abo Auf<br>- Dr. Mona El-Shahawy<br>8- Members of Al-Azhar University<br>- Prof. Dr. Mohamed Farag<br>- Dr. Reham Hamad<br>- Dr. Asmaa Madbouly<br>- Dr. Hossam El-Sayed<br>- Fatama Al-Zahraa<br>9- Dr. Abdallh El-Obady, Aswan Uni.<br>10- Prof. Dr. Ulrich Sack (Leipzig University, Germany)<br>11- Dr. Claude Lambert [Lorraine University, France]<br>12- Prof. Dr. Eleni Efthimiadou [NKUA, Greece]<br>Established and approved QCMP |
| • D6.2- QCMT group reports | January 2021-till now | - The biannual progress reports were stablished to cover the last periods of the project since it had been started and to right now. | The three biannual progress reports have been delivered to the External Evaluator (Prof. Dr. Michael Kirschfink) and were approved. |
| WP7– Dissemination | | | |
| • D7.1: Dissemination plan | January 2021 – January 2024 | • The dissemination plan of the project aimed to introduce the project, disseminate project | - > 5000 individual to be reached through dissemination activities<br>- On 8 March 2021, Al-Azhar University inaugurated the Kick-off meeting for |

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| | | partners, strengthen the collaboration between Egyptian and European partners, and clarification of the objectives and importance of the project.<br>• The dissemination plan targeted the following groups: postgraduates, lab technicians, administrative staff, educational academic staff, and non-academic researchers.<br>• IMCert was widely disseminated to publicity and communication activities at all the project phases through introductory PowerPoint presentations, project brochures, project posters, flyers, seminars, online webinars, social media, conferences, and publications. | IMCert. project in cooperation with universities of Egyptian, Germany, France and Greece. |
| • D7.2 Project's Website | June 2021- till now | • IMCert website provides all project information & aimed to increase awareness of IMCert progress. It was opened in June 2021 https://imcert.azhar.live/ | • An official website for IMCert. was successfully developed and includes all up-to-date information about the project https://imcert.azhar.live/ |
| • D7.3 Dissemination of digitised tools & e-tool kit | October 2022- January 2023 | This step is currently being discussed and is still in progress. | Defined IMCert. e-Tool kit and in-service dissemination however, this is still in progress. |
| • D7.4 Organizing national and International Conferences | May – September 2022 | • An official National conference was conducted at Al-Azhar University, and this was announced on the IMCert Official website: https://imcert.azhar.live<br>• An international conference was held in Athens, Greece, in the period from 22nd to 25th May 2022<br>• Another international conference was successfully held in Athens, Greece, in the period from 23rd to 28th Sep. 2022 | -More than 500 registration requests were submitted through the link for national and international conferences |
| • D7.5 Report on number of publications | September 2022 | E-Poster for IMCert. project was presented in the AMEE, Lyon, 27-31 August 2022 and in the | E-Poster for IMCert. project was presented in the AMEE, Lyon, 27-31 August 2022 and in the Gemeinsamen Jahrestagung 2022, Halle 15-17 September) were published. |

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| | | GemeinsamenJahrestagung 2022, Halle 15-17 September) were published. | |
| • WP8 Management | | | |
| • D 8.1 Project day to day [operational] management and coordination [operational] | January 2021 – January 2024 | • All the project partners were agreeing on a communication plan for management and communication in WP1.<br>• The project coordinator working full concentration on this project and much of his time was dedicated to the coordination/management of all the activities.<br>• The project coordinator organized regular internal meetings and communicate frequently with all project partners to make sure that they were up to date on the latest developments.<br>• He also makes sure that the project website is updated regularly and that all documents related to the project was archived correctly.<br>• The coordinator was in close cooperation with all members and was the contact person between the Consortium and European Commission.<br>• Project coordinator and representatives of the Egyptian and European partners met several times online and face-to-face to discuss the project steps, activities, and deliverables that each university was play in the project as well as all the technical and financial details for each participating university.<br>• The project coordinator was responsible for coordinating the work, reminding project partners about the deliverables and upcoming deadlines and assist the WP leaders board [WPL] where necessary. | • Holding several online as well as face-to-face regular and managerial meetings.<br>• The IMCert managerial committee created a timed communication strategy with all managerial bodies and the communication plan included even managerial meetings over the course of the project. |

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| | | • While a lot of responsibility lies in the hands of the respective WP leaders, the project coordinator had holistic overview, including the crucially important list of deliverables and deadline.<br>• Project coordinator was constantly kept track of these and make sure that what had been agreed on in the application, in the partner agreements, followed up on. | |
| • D8.2 Conflicts, Risk mitigation plan | January 2021 – January 2024 | • For small issues, we were able to solve it outside of the project managerial board (PMB).<br>• The main partners also had good cooperation with each other and met frequently in face to face and online.<br>• In case of conflicts all the project partners have agreed to try to solve it in a friendly manner by opened discussions.<br>• The project partners had plenty of successful cooperation behind us, so the risk of difficult conflicts was rather low.<br>• In case this cannot be solved, it was brought up at the next PMB. | • Conflicts & risks plan was applied<br>• The communication was based on transparency.<br>• All important decisions were written and sent to all project partners for approval shortly thereafter, this was reduced the risk of misunderstandings. |
| • D8.3 Biannual progress report | January 2021 – January 2024 | • Biannual managerial progress reports were prepared and reported to Project coordinator.<br>It was including all key facts that showed the progress of the activities planned as well as all the issues related to the management and coordination of the project. | The three biannual reports had been reported to the project coordinator and then delivered to the External Evaluator (Prof. Dr. Michael Kirschfink) |
| • D8.4 financial issues | January 2021 – January 2024 | • The grant management started by discussing the role of each partner during the project duration and the expenses was calculated depend up on their responsibilities.<br>• At the kick-off meeting, the grant has been prepared, organized in harmony, and fully | • The beneficiaries confirmed that they respect the social and labour legislation of their country regarding the costs of staff contributing to the project.<br>• Each beneficiary was responsible for ensuring adequate insurance arrangements for their staff while participating in project activities. |

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| | | discussed with all partners and sharing the responsibilities among partners as a soft start which indirectly confirm disseminating all managerial regulation, followed by establishing managerial board represented from all partners.<br>• There was special session during the Kick-off meeting presented by the project coordinator discussed all managerial and financials issues including the costs incurred for staff costs, travel costs and costs of stay, and reimbursement of actual costs for equipment and subcontracting costs.<br>• Mailing list for communication between project coordinator and all partners was announced and confirmed the final budget.<br>• This was followed by signing the Partnership Agreements between Al-Azhar University and Egyptian and European partner Universities.<br>• The partnership agreements have specified parts for financing concerns, payment arrangements, accounting records and financial information, and budgeting and financial management.<br>• The first instalment of the project budget (50%) was handled by the project coordinator and partners' leaders and the total budget was transferred into the beneficiary's bank account, denominated in Euro, in accordance with the partnership agreement.<br>• Orientation sessions, zoom meetings, and notification from the project coordinator were | |

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| | | addressed for the partners to be familiarized with rules of using the grant and addition to sharing grant guidelines.<br>• All templates that were received from EU officer were forwarded and discussed with all partners.<br>• Special face-to-face and online meetings were held for illustrating how to prepare financial reports. The financial records of the project were continuously updated according to the reporting templates.<br>• Submitted reports were revised and peer reviewed by Al-Azhar financial group. | |
| • D 8.5 Assistance to partner organizations with organizing meetings and events | January 2021 – January 2024 | • The organized events were massive, like the capacity building workshops which organized by P6 in (WP2).<br>• The regular meetings for curriculum development which handled by all partners in (WP3).<br>• National and international conferences (WP7) handled by P1, P2, P3, and P5.<br>• but as part of the general management the project coordinator was offer assistance & make sure that these were carried out in a way which is consistent with the overall running of the project. | • The respective WP leaders [WPL] were handled the event and in collaboration with project partners.<br>WPL was responsible to develop and share a set of documents, such as tasks lists, agreement for the management of the activities, agreement on trainings procedures, rules and time management, trainings handbook. |